AMERICAN ANNALS OF THE DEAF

Official Organ

Conference of Executives of American Schools for the Deaf
Convention of American Instructors of the Deaf

Edited by

IRVING S. FUSFELD

Under the Direction of

PERCIVAL HALL, of the District of Columbia, 1939
FRANK M. DRIGGS, of Utah, *ex officio*
MADISON J. LEE, of Kentucky, 1939
ELWOOD A. STEVENSON, of California, 1945
IGNATIUS BJORLEE, of Maryland, 1942
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Executive Committee of the Conference

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AMERICAN ANNALS OF THE DEAF

Revised Curriculum for First Preparatory Year as Compiled for the Southern Conference of Executives of Schools for the Deaf—I

FOREWORD

THE TRANSFERRED placement of pupils from one school to another has been a serious problem from an academic standpoint which has received little or no thought in the past from school officials.

This constantly increasing immigration of pupils and the gross irregularities in materials used at different grade levels by the recent Survey of Textbooks used in American Schools for the Deaf denoted the great need for uniformity in the courses of study that were used by the various regional schools.

At the Southern Conference of Executives of American Schools for the Deaf of 1937 a motion was adopted instructing the writer to look into the matter of curriculum and prepare a proposed course of study for the First Preparatory year with the idea in mind that it would be one which all of the ten schools which comprise the Southern group would possibly adopt.

The following executives make up the Southern group: Mr. T. M. Scott, Texas; Mr. D. T. Henderson, Arkansas; Mr. R. S. Dobyns, Mississippi; Mr. L. R. Divine, Louisiana; Mr. D. H. Riddle, Alabama; Mrs. H. T. Poore, Tennessee; Mr. W. L. Walker, South Carolina; Dr. C. E. Rankin, North Carolina; Mr. C. H. Hollingsworth, Georgia, and Dr. C. J. Settles, Florida.

Outlines of work for the first preparatory year were forwarded from the majority of the members and a careful survey lasting over three months was made.

Each word was selected for pupil utility, interest or value. Seasonal, fundamental and functional values were weighed and every word and principle used was put in its respective place because it led to more rapid comprehension, use of language, for speech reading and speech.

The silent reading outline exactly parallels the speech reading during the first few weeks of school. Very early during the year definite provision is made for individual work in reading, introduced as a class exercise at first, then enlarged upon and amplified in interesting and useful seat work activity.

From the frequency charts compiled it was easily seen that gross irregularities occurred in the evaluation of certain words and proper time of presentation. It was also noted that there were considerable repetition and unnecessary amount of deadwood or nonessentials.

The elimination of nonessentials, a better choice of vocabulary, a more useful set of language fundamentals and the integration of work, leading to individual silent reading, will ultimately bring our primary children to a more rapid and satisfactory adjustment to their environment.

In the preparation of this report the writer gratefully acknowledges the invaluable assistance of Mrs. E. Roger Jones, supervising teacher of primary grades in the Louisiana School. The successful completion of the task is in large measure due to her untiring effort and to her keen insight into the needs of the deaf child.

L. R. Divine, *President*
Louisiana State School for the Deaf
Baton Rouge, Louisiana

First Six Weeks

I. *Sense Training*

The length of time that sense training should be included on the daily schedule of the class varies with the needs of the individual members of the group. Certain children will be

found to need very little work of this type, while others will require even more than is listed in the outline below.

With a class of average ability, following this outline of work, two or three weeks of intensive work with sense training materials should be sufficient for the larger number of pupils in the group. After this time, sense training may be scheduled once or twice during the day, at periods when the children need rest or recreation.

Individual members of the class who require more of this type of work may be given sense training materials to work with at extra periods, either alone or with the help of one of the more mature members of the class.

This sense training outline is patterned after the Clarke School outline.

A. Cultivation of Sight

1. Through motion
   (a) Class movements in unison—standing, running, walking
   (b) Gymnastics of hands, arms, fingers, tongue
   (c) Buttoning, lacing, tying
2. Through color
   (a) Matching colors, using sets of objects alike in shape
   (b) Matching colors, using objects dissimilar in shape
   (c) Selecting and stringing beads and straws
3. Through form
   (a) Geometric solids and flat inserts
   (b) Matching silhouettes
   (c) Tracing
4. Through numbers
   (a) Recognition of numbers, using toys, marbles, balls, marks on slate

B. Cultivation of Touch

1. Through objects: Geometrical solids
   (a) Seen, selected by touch
   (b) Felt, selected by sight
   (c) Felt, selected by touch

2. Through vibration
   (a) In face, head, back of neck
   (b) On piano

C. Handwork

1. Stringing beads and straws
2. Coloring
3. Cutting
4. Drawing (in connection with reading)

II. *Speech Reading*

A. Nouns

1. a fish
2. a ball
3. a cow
4. some candy
5. a flower
6. a letter
7. a shoe
8. a car
9. a boy
10. a girl
11. a man
12. a woman
13. a baby
14. tooth
15. arm
16. a knife
17. a fork
18. a spoon
19. mouth
20. some water
21. a dog
22. father
23. mother
24. a tie
25. a cat

B. Commands

1. Jump
2. Bow
3. Fall
4. Run
5. Come
6. Stand up
7. Sit down
8. Throw a ball
9. Fold your hands
10. Walk
11. Skip
12. Cry
13. Erase the board
14. Wash your hands
15. Comb your hair
16. Brush your teeth
17. Wash your face
18. Cough
19. Hop
20. Laugh

C. Dictation: Elements and combinations as for speech

III. *Silent Reading*

NOTE: During the first two weeks of school the children match printed cards which they hold, to other printed cards, which are attached to the picture noun card with paper clips. After the first ten nouns are mastered, only one card is printed. This card is presented with the noun when the noun is introduced for speech reading. The child is held responsible for making the connection between the picture and the printed form.

A. Class Work

1. NOUNS presented for speech reading
2. NAMES of the children in the class and the teacher, president (superintendent), principal, and supervising teacher.
3. COMMANDS presented for speech reading. DO NOT ATTEMPT to break these up into component parts at this time.

B. Seat Work

1. Matching print to pictures. After the second week in school provide pictures such as are traced for the year books in the spring, and ten cards in primer print to match each picture. Let children sort and place under correct picture.

IV. *Speech*

A. Elements: wh, p, -p, t'h, f, ar, o'o, t, -t,

B. Combinations: Consonant-vowel, vowel-consonant, consonant-vowel-consonant

NOTE: The elements should be read from diagrams, and both elements and combinations should be read from script and written from dictation.

C. Rhythm

1. Develop perception of sound vibration
2. Develop sense of volume: Use drum for *strong* and *weak*

3. Bodily rhythms: *Run, Walk, Skip*
4. Time: 1-2

V. *Social Adjustment*

This part of the curriculum is best determined for each Six Weeks Period by a co-ordinated program seeking the following Objectives. This pattern of social adjustment forms the background for the entire year's work.

To provide, through experiences, for the child's growth

(a) In power to understand, interpret and adjust to the physical and social world in which he lives

(b) In such ideals and habits as will tend to make his world the better for his presence

A. Understandings

1. To lead the child to begin to realize
   (a) His dependence upon his parents and his school for all of his personal needs
   (b) His responsibility to co-operate if all his needs are to be supplied to the most satisfactory degree
2. To help him visualize
   (a) His home (secure pictures whenever possible)
   (b) Its location as related to his school
3. To help him become interested in weather changes from day to day

B. Abilities

1. To designate orally the simplest family relationships: home, father, mother and baby
2. To speech read, write, speak and read the names of classmates, and certain teachers and officers
3. To express appreciation

C. Attitudes

Providing for growth in desirable ideals, standards and feeling tones through developing:

1. A growing sense of the necessity for co-operation
2. A growing sense of the property rights of others
3. A growing satisfaction in a high quality of work
4. A growing sense of appreciation for home and school

5. A growing affection and respect for those responsible for his well-being

SECOND SIX WEEKS

I. *Speech Reading*

A. Names of pupils in the class, the teacher, president (superintendent), principal, school nurse

B. Nouns

26. a box
27. a top
28. an apple
29. an orange
30. a banana
31. a thumb
32. a card
33. a book
34. a handkerchief
35. a coat
36. a sweater
37. a hat (cap)
38. a door
39. a window
40. some paper
41. a pencil
42. a chair
43. a table
44. the floor
45. the sun
46. a comb
47. a toothbrush
48. a doll
49. Santa Claus
50. Christmas tree

C. Command

1. Brush your shoes.
2. Single imperatives with prepositional phrases using *with* and *to: JUMP, BOW, RUN, WALK, SKIP* and *HOP,* used in all possible combinations, using the prepositions *TO* and *WITH,* with previously taught common and proper nouns. Also, *"SHAKE HANDS WITH....."*
3. Transitive verbs with direct object

Throw.....	Shut.....
Get.....	Draw.....
Show me.....	Color.....
Open.....	

D. Adjectives: red, yellow, white, blue, orange

E. Number: one, two, three, four, five

F. Time Work: Days of the week marked off

G. Dictation—Elements, combinations and nouns as for speech

II. *Silent Reading*

A. Class work

1. Vocabulary: Nouns and commands as presented in speech reading
2. Language
   (a) Prepositional phrase with intransitive verb: To a boy; with a woman; with John; to the table; etc.
   (b) Past tense of intransitive verbs previously taught
   (c) Past tense of transitive verbs: Threw
   (d) Pronoun: I
   (e) Adjectives: Number and color as presented in speech reading

B. Seat work

1. Matching vocabulary to pictures
2. Draw.....
3. Color.....

Ex. Draw a ball. Color the ball red.

Draw four flowers. Color the flowers yellow.

C. News: As soon as the past tenses of a few of the intransitive verbs have been taught in print, begin to give news. This may be begun on the slot charts in print, but should be transferred to the blackboard in script. As the occasion arises, present the script for the verbs already taught in print, connecting the action with the language:

A girl ran. ..... is sick.
Ruth's father came.

NOTE: *IS SICK* is given in printing as soon as practicable in the second period of work. It is incidentally taught, used only when needed, but kept readily accessible for the children.

III. *Speech*

A. Elements: m, ou, -u-, k, -k, t^{2}h, aw, b, -b, s, ee, l
B. Combinations: Use two syllables
   1. Equally accented
   2. Accent on first syllable
   3. Accent on second syllable
C. Vocabulary: Arm, tooth, mouth, thumb, a car, a cow, mother, father
D. Rhythm
   1. Continue work on *strong, weak* with drum
   2. Begin work on resonance: Continuous tones contrasted with staccato tones
   3. Voice work
      (a) Accent
         1. Strong, weak
         2. Vocabulary
      (b) Resonance
         1. Humming
         2. Prolonged *ar, oo, ee*
   4. Bodily rhythms: Add *Hop, Mark time*
   5. Time: add, 1-2-3; 1-2-3-4

IV. *Social Adjustment*

See program of First Six Weeks, pp. 108-9.

THIRD SIX WEEKS

I. *Speech Reading*

A. Nouns

51. home
52. a bus
53. a train
54. some bread
55. some milk
56. the moon
57. a star
58. a basket
59. a horse
60. a sheep
61. a pig
62. a mouse
63. foot
64. eye
65. an airplane
66. some cake
67. some ice cream
68. a dress
69. some socks
70. pants—trousers

71. a shirt
72. a flag
73. a house
74. the sky
75. a tree

B. Commands

1. Look out of the window (in preparation for *SAW*)
2. Write your name
3. Walk fast
4. Walk slowly
5. Walk softly
6. Throw ..... to .....
7. Give ..... to .....

C. Adjectives: Black, green, purple, brown, sick, well, good, bad, little, big

D. Calendar: Today, yesterday, tomorrow

E. Dictation

1. Nouns, elements and combinations as for speech
2. Adjectives of number and color with nouns

II. *Silent Reading*

A. Class work

1. Vocabulary
   (a) Nouns and commands as presented in speech reading
2. Language
   (a) Adjectives of number and color used with nouns.
   (b) Pronouns: I, he, she
   (c) Question forms

Ex. Who .....? What did ..... do?

Develop on two charts, beginning with the imperative forms of known intransitive verbs on one chart, and the question form with its correct answer on the other. The teacher builds the imperative; the child gives the action responses; she builds the question; another child builds the language response from printed cards on the slot chart; the child performing the action slips an *I* over the pronoun at the beginning of the sentence. Later, the children are required to build the language from simple action

work. Start with *RUN, FALL,* then add other intransitives with past tenses regularly formed. Leave *cried, hopped,* and *skipped* until easier forms are well fixed. Add transitive verbs, then longer sentences with prepositional phrases.

B. Seat work

1. Matching script to print for all vocabulary. Draw and color in harder forms.

Ex. Draw five marbles.
Color two marbles brown. Color three marbles yellow.
Draw a big cat. Draw a little cat.
Color the big cat black.

C. News

1. Reserve a portion of the board for news, which should be written daily.

III. *Speech*

A. Elements: -a-, i-e, n, w, d, -d, r-, u-e, -e-, o-e, g, -g, oi, y, ur, -o-, oo (short), v

B. Combinations as in the preceding period. Teach *thr*

C. Vocabulary

1. Nouns: A tie, the sun, a ball, a boy, a girl, a man, a woman
2. Pronouns: I, you
3. Verbs: Saw (taught as an expression before the formal introduction of the five slates), fell, ran, got (or received)
4. Expressions: I know; I thought; No; Yes.

D. Rhythm

1. Perception of pitch: High, low
2. Voice work: Work on volume; resonance; accent
3. Bodily rhythms: Add March. Dance
4. Time work: Add 1-2-3-4

IV. *Social Adjustment*

See program of First Six Weeks, pp. 108-9.

(To be concluded.)

Language and the Deaf

By D. C. Yelton, B.A.
Central New York School, Rome, N.Y.

Much of the pathos of the deaf lies in this, that they live in a divided world. Their instinct tends to throw them with their own kind. Here they can find free and untrammeled social contact. Yet practical exigencies force them to orient themselves to a hearing world. They have their being in a world of hearing people, they must earn their bread in a social and economic order dominated by hearing people. Their handicap would, without proper orientation, tend to make of them a race apart. But they could never be a united race; like the Hebrews, they have no patrimony, no fatherland. They cannot league themselves as a competitive unit to be reckoned with on their own terms. In this nation of 120 and more million people, there are scarcely 100,000 deaf persons scattered about in the 48 states. The situation in other regions is analogous. Consequently the need of coming to terms with a hearing world. It is the dedicated task of education of the deaf to bring about this orientation so that the deaf may carry on the struggle for existence in a hearing society.

The keystone of the problem is, of course, the matter of language. It is this that makes assimilation of the deaf a much more perplexing problem than that of, let us say, the blind.

Language we may define, in the simplest terms, as a medium of communication. It is an instinctive growth, the natural function of a highly developed organism. Like all functions it works out its way through channels inherent to the organism. All spoken language has its origin in the imitation of sounds. It is thus in its inception an auricular process—that is to say, the auricular activity precedes and conditions the oral activity. Aristotle rightly discerned the chief avenue of knowledge to be the hearing. To go further (if one is permitted to go further than Aristotle in the matter of definition) we may discover the whole process of

formal education in the well established equilibrium between these two activities, the oral and the auricular. Long centuries of imitative activity have gone to fashion the complex web of palatal, lingual and labial subtleties that make up a modern language. Yet this is the normal heritage of the hearing child; he can master his language by almost unconscious daily imitation of his elders. The deaf child, however, must master spoken language by artificial methods—by the visual imitation of finely-shaded muscular motions rather than by the instinctive imitation of sounds. By this artificial and difficult process he must telescope, in his few years of schooling, centuries of language development.

But let us look a moment at the sign language, developed by the deaf in accordance with the immutable law of compensation. Their strongest stimuli are visual. Thus their language is inevitably one of visual imitation. Their hands and fingers become their expressive medium. To this medium they have (let us admit it) applied much of the subtlety and skill that we have cultivated in our vocal apparatus. We must not forget that the hands remain the medium of much of the highest art. They not only wield the brush and chisel of the visual artist, but they are indispensable to the performance of musical art. The violin, the piano, all the instruments find their voice through the medium of the hands.

And so, now that we are launched, let us pay tribute to the qualities of the sign language. It has, to a high degree, the quality of graphic intensity. It has the freshness, the immediacy of impression too often lacking in a highly developed language such as our own. Its symbols are still closely allied to the visual stimuli that prompted them—a quality analogous to onomatopoeia in a spoken language. All youthful and vigorous languages share this descriptive quality. One thinks of the Anglo-Saxons with their "whale-paths" and "breast-coffins." Our language tends more and more to make of words mere colorless counters, divorced from the graphic and dynamic qualities inherent to them. It was the task of the Imagist group to attempt to restore to the language some of these original qualities, which they be-

lieved constitute the specific virtues of the highest poetry. To this end they appealed to the Anglo-Saxon, and notably to the Chinese. In the highly graphic symbols of the Chinese they found the tactile and visual values they sought in their verse. It is interesting perhaps, in this connection to look at a phrase in Chinese. Here is one reprinted by Ezra Pound[1] from the notebooks of the scholar Fenollosa:

One notes that such "colorless" words as articles and prepositions are not required. But let us look at the ideograph for "sun." It will be observed that this symbol is a constant in all three characters. In "rises" the sun is seen over a horizon, in "East" it is seen above a horizon and behind a tree. And though these symbols may be too conventionalized to appeal to the Western eye, there is no doubt but that the Chinese mind visualizes the original metaphor implicit in the words (implicit in all words for that matter), and that consequently the mental process undergone is always a dynamic, not a static, process as too often is the case in English. In philosophical idiom the language is a perpetual "Becoming." The signing of the above phrase invites no close analogy with the Chinese symbols. But the divisions of the day are expressed, in the sign language, by a pantomime of the relative positions of the sun, and the word "year" itself is signified by the rotation of the earth about the sun (represented simply by the two clenched fists). Thus also "one hour" is expressed by a hand making one complete revolution on a dial (an index finger on an open palm). And so one might go on. But this is perhaps sufficient to reveal how the sign language displays, through a different medium, and

[1] The Imagist poet. The essay, "On the Chinese Written Character," may be found in the volume called *Instigations of Ezra Pound,* Boni and Liveright, New York, 1920.

no doubt on a more primitive plane, something of the dynamism of the Chinese written character. Pound reports that the Vorticist sculptor, Gaudier-Brzeska, mastered the more primitive Chinese ideographs after a few sessions in the British Museum. And as this language is readily apprehended by a plastic imagination, so the sign language might be easily grasped by a man with dramatic flair. Perhaps some of our readers will recall the comment of a recent issue of *Life* on the arresting and dramatic pantomime of a sermon in sign language delivered to the Jewish deaf in Temple Emanu-el, in New York City. It is significant in this connection that the Chinese, with their graphic language, are also masters of the most highly developed art of pantomime.

So much for the sign language. We can say at least that it has graphic and dramatic quality. Like the Egyptian or the Chinese, it is a system of hieroglyphics, only not of written, but of manual hieroglyphics. Like these languages it tends toward a shorthand style, relying strongly upon substantive and descriptive words, with a minimum of such ancillary words as prepositions and auxiliary verbs. Moreover, it is a primitive language with the vigor of the primitive.

Now all of this is very well. But language is unfortunately not, in its primary significance, an object of aesthetic speculation. It is, very simply, a practical means of communication. For communication among one another, the sign language was the instinctive and inevitable outgrowth of the condition of deafness. But—and here we return to our original theme—the deaf live in a world dominated by the hearing. They cannot, in the nature of the case, ask the hearing to master their language. There is nothing for it but for them to master our language. Moreover (for better or worse) the forms of our language are not dictated by the nostalgic preferences of Imagist poets, but by the ever-increasing complexity of our intellectual structure. It is a commonplace to say that we live in a precision age, an age dominated by abstract concepts that tend more and more to divorce themselves from the visual and tactile. The forms and modes of a language are necessarily conditioned by the framework of thought which it must express. And so the deaf, to move

freely in such a world, to cope with the mechanical and legal abstractions that govern this world, must master the structural intricacies of its language. And English, like other modern languages, is exacting in the matter of tenses and numbers, and in the precise disposition of auxiliary words—all of which are indifferent to the pantomime of the sign language.

Thus the use of the sign language in the classroom becomes an admitted hazard to the effective mastery of English construction. Indeed, the propriety of allowing signing at all during the years of schooling is a legitimate and, we believe, a hotly contested question. The present paper does not concern itself with this question, nor with the possibility (seemingly very remote) of stamping out the sign language entirely. Its contention is simply this, that, no matter what the teacher's attitude toward the language—whether it be respect for its intrinsic qualities, or fear of it as a menace to effective education, or both—he cannot, under existing conditions, afford to ignore it.

The repeated decisions of the National Association of the Deaf in favor of the sign language need not be accepted as an ultimatum, but they must be recognized as a matter of empirical fact. At any rate, there the language is, and it is our belief that it remains an invaluable key to the psychology of the deaf, a signpost along the difficult path that their education must take. Our appraisal of the language may seem exaggerated to some people. Our reply would be that it is not sound strategy to underestimate the strength of this force. But strategy may go further. The highest strategy is that which not only gauges the strength of this force but contrives to maneuver it into the position of an aid. The sign language is, after all, the purest creation of the deaf mind in its primitive state—without oral instruction, that is. We have said that it is an instrument of compensation. Educators of the deaf, in depriving the deaf of this instrument, must themselves face the need of supplying compensatory values. The symbols of our language must be made as graphic and vital as possible. This no doubt involves some excursion into the root meanings of words. The logic of syn-

tax must be developed. In all of these efforts there must be a constant appeal to the tactile and visual senses. For the whole problem pivots about this focal matter of language.

Our discussion has been based upon no pedagogic theory, but upon the acceptance of an empirical fact, and of the natural question arising from that fact. Here is a language employed by some 100,000 people in our country—what can be said about it? And so, in the main, it has confined itself to an academic discussion of the language. But beyond this purely expository intent, it advances a plea for the thoughtful consideration of that language by educators of the deaf. For, let us repeat, it remains our belief that the sign language, as the one instinctive creation of the mind of the deaf, offers to educators their most valuable key to the psychology of the deaf.

What of the Sign Language?

By Tom L. Anderson, M.A.
Council Bluffs, Iowa

During the past decade, my attention repeatedly has been drawn to evidence that something is happening to the sign language as it was handed down to my generation. It is apparent to me that we have lost many of the influences which formerly tended to standardize the manual language. I am led to the conclusion that the loss of these influences, and the substitution of several more or less unwholesome influences, is tending to bring forward an inferior sign language which we refer to as "a sign language" more correctly than as "the sign language." Nor is this new language uniform, except possibly in its origins, as will be shown.

In our schools today it seems to be the popular notion that anyone whose duty calls him to the platform to address deaf pupils may work out his own system of a manual language. We may except certain schools where veteran sign stylists remain in positions of authority. Some of these persons may have had the advantage of a brief course of training. Some may have "just picked up" signs. Each speaker assumes an air of authority, and apparently aspires to perfection only in his own model. The attitude seems to be, "This is my sign language."

Perhaps I am guilty of painting with a large brush. As I said above, it is at least ten years since I began to notice that something was happening to the sign language which I have diligently sought to master over a period of thirty years. The observations made and the conclusions formed are herein frankly set forth.

First, I believe that the sign language as it came to me through the acknowledged masters has suffered in the hands of young hearing people who have taken it up without proper grounding in theory and practice. These young people whom I have observed seem to have little respect for the language as a noble means of communicating noble thoughts. Many

of them use it in the spirit of the young man of my acquaintance who asks for the tomato catsup by making the sign for "cat" and the sign for "up" and expecting a laugh.

I have found many of these young people sincere enough, in a way, but just not knowing any better. Somewhere, somehow, they have picked up a smattering of the manual language. They seem to have rounded out their command of this language under the coaching of the children in their classes. They remain aloof from the adult deaf, and avoid exposure to the fluent and correct idiom under circumstances which would be embraced avidly by the sincere student of language. Never having studied the masters, if indeed these young people realize that such a personage exists as a master artist in the sign language, they seem content to get by in a slovenly manner, on a smattering.

There is no other word except slovenly which may be applied to the manual delivery of many young hearing teachers today. In their use of the manual alphabet, for example, they aim at speed rather than clarity, jerk the hand about in the air, slur the letters together. In general their delivery is such that college-trained deaf people, with years of practice in the manual language, find it difficult to understand them. This being true, how can the children be expected to understand them?

Second, the sign language as my generation inherited it has suffered the loss of its idiomatic grace and rhythm by being forced to trail along behind the spoken word. In our schools, the fashion now is to address assemblies bilingually for the benefit of the hard-of-hearing pupils. Undoubtedly, in this circumstance, the hands are used grudgingly. If any slicking over of thought is done, the speaker does it on his hands.

"Bilingual addresses are an abomination," said a veteran deaf educator to me recently. "Betwixt the temptation to watch the lips of the speaker and his hands, I sort of fall between two stools, and fail to get a clear idea of what is going on."

Thirty years ago, Dr. E. M. Gallaudet was the only per-

son I knew reputedly competent to address an assemblage bilingually. Today, the feat is commonly attempted. But if the speaker's hands fall behind in the unequal race, the tongue wins. In occasional assemblies, where hearing visitors must be considered when introductory remarks are made, the bilingual delivery may be employed gracefully, by making brief statements first in one language, then in the other. But the deliberate use of the simultaneous delivery by persons not sufficiently competent to do so leaves intelligent deaf persons in the assemblage conscious of being cheated.

Third, the stress upon English thought, and "the English order," has altered the basic structure of the sign language. I do not hold with the "old timers" who would stress the many unnecessary inversions possible, and still practised by some. The English order has its merit, if it were not for the conscious effort made by many speakers to fit a sign to each word in the English sentence structure. To those familiar with the ideography of the pure sign language, some of the jams speakers get into when they try to sign every word would be ridiculous if they were not so significant of the harm being done.

It has been the fashion to refer to the manual language as "murdering English." Rapidly the situation is being reversed. Yet no one seems to be concerned, if indeed anyone clearly realizes that English is being encouraged to murder the language of signs. Since two wrongs never yet made one right, we may assume that the problem of precedence has not been solved.

For example, we see such practices as joining the conventional sign for "hard" to the conventional sign for "ship" to make "hardship," an idea well drawn by a proper conventional sign. We observe the sign for "under" joined to the sign for "stand" to make "understand." We see the directional sign "to" meaning "toward" now being used widely to complete the infinitive verbs. The sign for "that" is being pressed into wide use regardless of what part of speech the word "that" represents in a sentence. It is also being substituted for the article "the."

We see separate signs for "stand" and "up," likewise for

"get" and "up," displacing expressive single signs. To those who are engaged in rebuilding the sign language on the new plan, the sign for "get" is a great boon. By its wide application, we "get married," "get hurt," "get praised," "get a letter," and so on, invariably in the combination of gestures introduced by catching an imaginary fly at rest on one of our fists.

According to the modern technique, if we cannot think of a sign for a word, or pervert one to use, we can spell out the word to preserve the purity of the English sentence. Large words tend to slow down the oral delivery to such an extent that they are slurred over in spelling. This destroys the clean-cut beauty of snappy, graceful spelling, such as we have enjoyed at the hands of the late Drs. Gallaudet, Long, William Jones and the living Drs. Hall, Ely, Peet, and Mr. Stevenson, to name a few.

It is when young people get up to sign poetry word-for-word that the iron enters the soul. I thought the uttermost limit was reached when a young woman attempted "O Little Town of Bethlehem," and proceeded to tell "How still we see thee lie!"—"lie" translated by drawing the backs of two fingers of the right hand across the up-turned palm of the left. She might just as well have poked the index finger of the right hand across her chin.

Digressing somewhat, I'd like to point to this particular passage, "How still we see thee lie," as an illustration of the peculiar futility of mere words as compared with the adaptability of the pure sign language in communicating poetic thought. Translated into "word-signs," the word "how" is completely lost, considered in its poetic meaning. The sign for "how" follows the idea of "unfolding" or "producing," whereas the poet's "how" implies the superlative of "still." The skilled sign maker, therefore, is the master of English who can get beneath the poet's words to the poet's idea, which he then depicts. He would translate the above passage into an ideograph of a little town nestling very, very still, with the "how" left entirely out.

Fourth, the greatest crime the English substitution has done to the sign language has been the destruction of panto-

mime. Just as platform artists are becoming rarer and rarer, pantomime is becoming a lost art. Now it is the fashion for speakers to stand flat-footed, in one spot, using only the hands in producing word-signs. After fifteen or twenty minutes of this, we are quite ready to invite the speaker to sit down and rest his face and hands.

Artists of yesteryear varied their sign delivery by the skillful use of pantomime, effectively lightening their delivery so that we could sit for two hours and more in steady concentration without appreciable fatigue. For example, take the masterly rendition of "The Bells" by the late Dr. William Jones of Fanwood. His use of pantomime was outstanding above his wonderful command of signs and his remarkably clear, deliberate spelling. Just now his trick of bringing in jingling sleigh-bells comes to mind as an expressive illustration. Try it yourself. Place the front of your wrists against your sides, fingers extended forward. Gently sway the body from side to side, and as you incline to the side shake your hands loosely up and down, twice. Get rhythm. Jing-jing, jing-jing, jing-jing, jing-jing. Hear those bells?

Now, as far as English goes, or word-signs, just try to spell out a sentence, or make a combination of word-signs equally as effective in creating the imagery of bells jingling on horses. Remember, it is the eye which must hear those bells, not the ear.

I recall the manner in which the late Dr. Long told animal stories to children, particularly the story of the lion on the bank of a stream who saw his image reflected in the water and mistook it for a rival. Dr. Long would become a raging lion, glare furiously, shake his mane, roar, lash a powerful tail, tear up and down the bank, until finally he would plunge into the stream, to be disillusioned. No English, no word-signs, yet the story was revitalized vividly. The children would squeal delightedly, jump up and down, clap their hands, and fairly live the story with him. We no longer see such revitalization of stories for the benefit of young children who cannot share the pleasure of reading.

Fifth, enter the "hard of hearing" in greater and greater

numbers, many of them well able to hear the teacher's speaking voice in the ordinary room. It cannot be denied that mixed-class teaching technique has been modified for the benefit of these young people who retain usable hearing. The natural effect is to place the non-oral, non-aural pupils at a grave disadvantage, not only in the classrooms but in group activities. Our schools for the deaf have acquired "Glee clubs," "Yell clubs," and other group organizations of the schools for the hearing into which the non-aural pupils do not fit. Their inferiority complexes are not relieved when public assemblies are aimed, apparently, at their more fortunate brethren, with someone on the sidelines making hurried gestures for their benefit.

For thirty years the National Association of the Deaf, in wisdom and foresight, has maintained a hard-working committee charged with the duty of obtaining and preserving motion-picture films showing outstanding sign language orators in action. These films are dedicated to posterity. This organization has expended upward of four thousand dollars on these films, and they are now priceless. This is a most laudable undertaking. However, at the rate the sign language is deteriorating among the deaf, what assurance have we that posterity will understand, or even appreciate, these films?

Taking the deaf population by and large, admittedly there are many who can and do get along well with hearing people without considering the sign language as essential to this relationship—the ideal of educators. These are reasonably contented in this association. Yet these same people find it to their great benefit occasionally to be together under circumstances that make an understanding and an appreciation of the sign language profitable to themselves. Their usefulness to society is increased by their ability to take to the platform as leaders in thought and inspirers of action, and to make a clear, forceful argument that crystallizes public opinion.

On the other hand, there are many of the less fortunate who do not find happiness through exclusive association with the hearing. They are found in our social and welfare or-

ganizations, usually bearing with credit a heavy share of the work. They are in our churches, dependent upon the sign language for a broad appreciation of religious thought and a proper knowledge of God's will as interpreted by the missionaries. They all come up through our schools. Their welfare and happiness depend to a well recognized extent upon the use of a system of communication satisfying to them. The free choice of this definite group is the manual language.

The schools are finding it impossible to provide a substitute system of communication which this group can use to suit their need. I raise the point here: Since we are to have a sign language, why not the best? Why cannot we have one which is as graceful, beautiful, clear and expressive as we older deaf people know the sign language to be in the hands of those who regard its mastery as a laudable achievement and its practice as a high art? Why, in its place, must we be offered a mongrel gibberish—actually the "weed language" which an oral enthusiast once unjustly called the sign language of the past generation?

To clear the air, and in the hope of promoting a saner attitude toward the sign language of the deaf, I respectfully advance the following suggestions.

First, to the extent that the sign language must be used, and is being used for lack of an acceptable substitute, let us have the very best. Let us reform the attitude current among educators, that we can sneak by with a modified gesture language backstage, allaying our fears with the palliative that this is not "the sign language" against which educators have been warring.

Educators of the deaf have never been able to unite, nor have the intelligent product of their schoolrooms been able to hold with them, in the opinion that the use of a manual language in its proper place is harmful in the broad education of the deaf. Psychologists have long viewed with alarm, but they have never been able to devise a successful substitute for, the gesture language. What is it that now restrains us in the suitable use of signs? To whom must we apologize if we use the sign language effectively, where its

use is found necessary and desirable? We know that we cannot transform deaf children into hearing adults this side of the Styx.

"The sign language is deteriorating," is one veteran educator's opinion we can freely share. "One reason is that the number of deaf teachers is decreasing. Another is that the oral schools will have none of it. A third is that the combined schools are featuring the oral side and the manual side is belittled and kept in the background. The young pupils pick it up from the older ones. There is no one to correct them and bring out the grace and beauty of the language. Consequently, the signs become jerky, crude, too fast, and accompanied by unnecessary facial grimaces. It seems to me that if signs are to be used at all, they should be taught in the right way."

Second, let only persons properly qualified to use the sign language be permitted to employ it in addressing deaf children in our schools. Let there be intelligent supervision and control, rather than an atmosphere of unenforced prohibition. To those who can qualify, and who render valuable service on the platform as well as in coaching young people for platform appearances, let there be adequate recognition rather than mere sufferance. Let them have reason to take just pride in the attainment, that they may pass this feeling of pride on to the young people.

In this connection I would emphasize the fact that more than a few months' practice in a normal training class is necessary to qualify a young hearing person as an authority on the use of the sign language. These young students should not be turned over to our schools as qualified until they are able to earn the approbation of intelligent deaf critics. They should at least qualify up to a rigid standard of excellence in the use of the manual alphabet.

Perhaps I am too severe with our hearing friends. They are placed in the embarrassing position of having to master a difficult art while conscious that its practice is officially frowned upon, if not actually forbidden by their employers. They may be excused for reasoning that effort expended to master a forbidden accomplishment is wasted effort. They

certainly have little reason to conclude that their enthusiastic study of the manual language will lead to professional advancement. Nevertheless, they find that they cannot entirely avoid using the sign language, if they associate with the deaf to any extent outside of the schoolrooms. They are indeed placed between two fires. They need proper encouragement, and the opportunity to study the manual language under dignified instruction. It must be admitted that the hearing teacher proficient in the use of the manual language can serve more broadly among the deaf, and thus exert a wider influence upon their lives, both in school and out. His service as an interpreter is not the least valuable he can render, yet his ability as an interpreter frequently places him in a most difficult position. Voluntary service at a teachers' convention is an example.

Interpreting is a task for an expert. The lack of really capable sign makers among the hearing teachers these days is glaringly shown at our conventions, where our young hearing friends are "put on the spot" literally, with no other reward than casual thanks. Convention officials recognize the need of this service, if they are to hold the deaf teachers as members, yet they expect to find ability among a group of young people who know they should not admit this ability, and who actually are penalized at conventions for the admission. I have seen interpreters, soaked in perspiration after rendering an address, forced to return to their hotel for a bath and a change of clothing.

Since this service is voluntary, we can scarcely be frank about the quality without seeming to be discourteous. So everyone concerned seems to be nicely settled in an attitude of "suffering in silence." There is no sense in this. The sensible course would be to provide a team of expert interpreters, and pay them well for a service which is difficult to render.

Third, let us disassociate the hand from the tongue. The human brain can be forced to govern the movements of both simultaneously, but proper synchronization is not attainable with full justice to both modes of expression. If we must have extended bilingual remarks, let there be an interpreter

in order that both languages may with proper dignity be emphasized.

Since the entrance of the hard of hearing in greater and greater numbers has brought about the need for this dual delivery, the logical remedy is to segregate the groups in both schoolrooms and assemblies. Injustice in some degree is both possible and probable to both groups, and especially to the group of genuinely deaf children for whom these schools were created, where the school activities are complicated by the intermixture of these hard-of-hearing public-school children. Nor do we gain anything by combining these groups. It is noticeable that these hard-of-hearing pupils seldom are disposed to exert themselves in school activities up to standards set by leading deaf pupils in the past, except possibly in athletics.

Fourth, let us drop the notion that we must have a sign for every word in every sentence. Especially in public addresses, let us give the quick minds of the deaf a chance to leap ahead joyously, to cover the thought. Why fetter them to mere words which, after all, may be of no great importance to the thought pattern?

Fifth, let us promote, encourage, and reward the platform appearances of the few remaining exponents of the proper sign language, that they may pass to this generation something of their art, their fire. Are we not too prone to feature addresses by hearing speakers through interpreters, while we ignore the inspirational value of addresses by prominent deaf men and women who have attained success in life against the same grievous handicap these young people face? These deaf speakers can talk with authority such as few hearing men can command. They should be honored and encouraged.

Sixth, let us take from their storage vaults the films intended for posterity and make use of them now. Especially let us see the gatherings of our great national organizations of the deaf enriched by exhibitions of these films, treated in a spirit of reverence. Let the young people and the teachers in our schools see these films, that they may have a proper concept for a model. There is little virtue in enter-

tainment stunts, self-devised, where both pupils and teachers lack proper models in the art of presentation.

These suggestions may not point to the millennium, and they are not intended to. However, I believe that they point to a sane approach to the solution of an embarrassing problem. They may also point to a method of ending the present confusion before it becomes worse confounded throughout the land.

Behavior Problem Tendencies in Deaf and Hard-of-Hearing Children

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THE behavior, personality adjustment, and emotional thwartings of deaf and hard-of-hearing children have not been extensively studied. It has been suggested, however, that the disability of defective hearing serves to thwart many children and results in emotional disturbances. Menninger (5) feels that deafness is a permanent handicap to adjustment, and the few experiments in the field tend to confirm his observations. Lyons (3) gave the Thurstone Personality Schedule to older deaf children and concluded that they have more emotional problems than do normals. Pintner (7) gave the Bernreuter Personality Inventory to deaf adults at Gallaudet College and to 126 other deaf adults, and concluded that the deaf are slightly less emotionally stable, slightly more introverted, and slightly less dominant than normals. There was no difference between the deaf and hard of hearing. Madden (4) using a short rating scale found that the hard of hearing are not rated as leaders, and are often more shy and solitary than normal children.

PROBLEM

The purpose of this study is to compare the behavior problem tendencies of deaf and hard-of-hearing children in an elementary day-school for the deaf with those of normal-hearing children on the Haggerty-Olson-Wickman Behavior Rating Schedule (2).

[1] The author wishes to acknowledge his indebtedness to Dr. Milton C. Potter, superintendent of the Milwaukee Public Schools, for his kind permission to carry on the investigation; and to Miss Sadie Owens, principal of the Paul Binner School for the Deaf, for her generous aid and co-operation in this study. The assistance of Miss Hazel Zanzig in the tabulation and calculation of the data is greatly appreciated.

Procedure

Trained teachers of the deaf at the Paul Binner School, Milwaukee, Wis., rated 112 deaf and hard-of-hearing children on the Haggerty-Olson-Wickman Behavior Rating Schedule. The children rated were from seven to sixteen years of age and were in the first to the eighth grade.

The Haggerty-Olson-Wickman Behavior Rating Schedule (2, 6) has two parts: Schedule A and Schedule B. Schedule A, the Behavior Problem Record, consists of 15 items that indicate undesirable behavior, such as: Disinterest in school work, lying, speech difficulties, etc. The rater is asked to check each of these items as: (a) Has never occurred, (b) has occurred once or twice, (c) occasional occurrence and (d) frequent occurrence.

Schedule B consists of four divisions: Division I, intellectual traits; Division II, physical traits; Division III, social traits; and Division IV, emotional traits. An example of one item under intellectual traits is (2):

"4. Is he slow or quick in thinking?

Extremely slow	Sluggish plodding	Thinks with ordinary speed	Agile-minded	Exceedingly rapid"

The rater is asked to observe the child and to check the phrase or expression that best describes the reactions of the child.

Results on Schedule A

Table I compares the medians of deaf and hard-of-hearing children with those of normal-hearing children on Schedule A. For 61 deaf and hard-of-hearing boys the median score was 30.6, as compared to a median score of 13.2 for Olson's normal-hearing boys. For girls and for the total of boys and girls a similar large difference is noted. The high scores on these scales indicate undesirable behavior.

An analysis of the items in Schedule A showed that the deaf and hard-of-hearing children were given the highest possible scores on Item 10, "speech difficulties." Obviously deaf children are defective in speech and the rating for prob-

lem tendencies becomes exaggerated because of this item.

To determine what the results would be if the item of speech difficulties were excluded, a recalculation was made. Each deaf child was given an average speech difficulty score similar to that obtained by normal children as described by Haggerty (1). Medians were then calculated and are shown in the last column of Table I. The medians for the 61 boys and the 51 girls were 18.7 and 11.5 respectively, again showing a higher behavior problem score than that found with normal-hearing children. We could have made similar corrections for unnecessary tardiness (which does not occur

TABLE I

A Comparison of Deaf and Hard-of-Hearing with Normal-Hearing Children on Schedule A

	Deaf and hard of hearing		*Normal hearing children*[2]		*Deaf and hard of hearing corrected for speech*	
	N	Median	N	Median	N	Median
Boys	61	30.6	1098	13.2	61	18.7
Girls	51	24.7	1065	6.1	51	11.5
Total	112	28.75	2163	8.6	112	15.5

because the children are all brought to school by busses) and for imaginative lying (which is difficult for teachers to detect because of the language handicap). However, corrections for these two items would, if anything, only further exaggerate the differences between the group with defective hearing and normal-hearing children.

It is the writer's opinion that Schedule A is not a valid rating scale for deaf children because of the factors mentioned above. If any conclusion can be drawn from the data, however, it is that the deaf and hard-of-hearing group show greater behavior problem tendencies than do normal-hearing children on this rating scale. Furthermore, deaf and hard-of-hearing boys appear to be greater problems than deaf and hard-of-hearing girls, in the same way as normal-hearing boys exceed normal-hearing girls on this scale.

[2] Haggerty-Olson-Wickman norms—see reference 2.

Results on Schedule B

Schedule B does not offer the same difficulties as Schedule A. An analysis of the items shows that deaf children can be rated on them without difficulty. No item such as "speech difficulties" occurs in Schedule B to make interpretation difficult.

TABLE II

A Comparison of Deaf and Hard-of-Hearing Children with Normal-Hearing Children on the H-O-W Behavior Rating Scale—Schedule B

	Deaf and Hard-of-Hearing Children		*Normal-Hearing Children (H-O-W, 2)*		*Difference between Deaf and Normals*	*Critical Ratio*
	No.	Mean and PE_m	No.	Mean and PE_m		
Boys						
Division I Intellectual Traits	61	19.30± .65	300	18.2± .23	+1.10	1.6
Division II Physical Traits	61	13.56± .28	300	14.1± .15	− .54	1.73
Division III Social Traits	61	22.98± .58	300	22.4± .25	+ .58	.91
Division IV Emotional Traits	61	25.52± .82	300	20.4± .27	+5.12	5.92
Total Boys	61	81.16±1.81	1473	72.4± .32	+8.76	4.77
Girls						
Division I Intellectual Traits	51	18.37± .53	326	17.1± .21	+1.27	2.23
Division II Physical Traits	51	14.94± .58	326	13.5± .18	+1.44	2.38
Division III Social Traits	51	21.61± .58	326	18.2± .18	+3.41	5.6
Division IV Emotional Traits	51	21.90± .71	326	18.1± .22	+3.80	5.1
Total Girls	51	76.11±1.85	1394	65.9± .29	+10.21	5.5
Total Boys and Girls	112	78.88±1.31	2867	69.2± .22	+9.68	7.3

Table II gives the number of cases, the means, and the probable errors of the means for boys and for girls in each of the four divisions of Schedule B. It includes the scores of the deaf and hard-of-hearing children and of normal-hearing children as given by Haggerty *et al.* (2). Critical

ratios for the differences between the deaf and normal-hearing averages are shown in the last column.

It should be noted from Table II that in the results for boys on Division I—intellectual traits—there is a difference of 1.10, indicating a greater degree of problem tendencies in the group with defective hearing. However, this difference is not at all significant since the critical ratio is only 1.6. On Division II—physical traits—the normal exceed the deaf and hard-of-hearing by a score of .54, which again is not significant as judged by the critical ratio of 1.73. Similarly, Division III—social traits—shows no significant difference between the defective-hearing group and normals. But on Division IV—emotional traits—there is a difference of 5.12, pointing to excessive problem tendencies in the group with defective hearing. The critical ratio of 5.92, indicates that the difference here is statistically significant. For the total score for boys the critical ratio of 4.77 is again statistically significant. From these results we may conclude that in emotional traits specifically, and for Schedule B as a whole, deaf and hard-of-hearing boys exceed normal-hearing boys in problem tendencies.

The results for the girls are very similar to those for the boys. On all traits—intellectual, physical, social, and emotional—the deaf and hard-of-hearing girls show higher scores than the normal-hearing girls in problem tendencies. For intellectual and physical traits the critical ratios of 2.23 and 2.38 cannot be considered significant.[3] For social and emotional traits, on the other hand, the critical ratios of 5.6 and 5.1 are significant. From these results it may be concluded that our group of deaf and hard-of-hearing girls exceed normal-hearing girls in problem tendencies in social and emotional traits. Again, for Schedule B as a whole applied to the girls, the critical ratio of 5.5 indicates that the defec-

[3] Eighty-nine of the 112 children of this study were given Grace Arthur Performance tests. The average IQ for this group was 99.4. The fact that the group showed average intelligence on this objective intelligence test confirms the rating of the teachers that the group studied did not differ from normals in intellectual traits. Similar independent checks are not so easily found for the ratings in emotional traits, where we found a significant difference between the defective-hearing group and normal-hearing children.

tive-hearing girls have significantly greater problem tendency scores than normal hearing girls.

The results on the combined scores of the boys and girls show a critical ratio of 7.3, indicating greater problem tendencies in the group with defective hearing. It should be noted also that deaf and hard-of-hearing boys exceed the deaf and hard-of-hearing girls in problem tendency scores. This difference represents the same tendency that is found in normal-hearing boys and girls.

A separate analysis was made of the behavior rating scores of the deaf and those of the hard-of-hearing children to determine whether or not there was a difference in problem tendencies between these two groups. The results of the analysis showed no difference between the children considered deaf by their teachers, and those considered hard of hearing.[4] For the deaf group the mean score was 78.5 ± 1.9, while for the hard-of-hearing group the mean score was 79.5 ± 1.8. The difference of the means divided by the probable error of the difference of the means showed a critical ratio of .38, indicating that the slight difference is not significant.

Summary and Conclusions

One hundred and twelve deaf and hard-of-hearing children in grades 1 to 8 were rated on the Haggerty-Olson-Wickman Behavior Rating Schedule. From the data we may conclude that:

1. Deaf and hard-of-hearing children as a group present significantly greater problem tendencies than normal-hearing children.
2. The greatest difference was found in emotional traits, while the least difference was found in intellectual and physical traits.
3. As with normal children, defective-hearing boys exceed defective-hearing girls in behavior problems.
4. There was no difference between the deaf group and the hard-of-hearing group in problem tendencies.

[4] The deaf group had an average hearing loss on the 2-A audiometer of 72. The hard-of-hearing group had a hearing loss of 50.

5. This study confirms the observations of others that children with defective hearing have more emotional problems than do normal hearing children.

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A Comparative Study of the Intelligence of a Group of Deaf and Hearing Children[1]

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Introduction

Within recent years, several studies have questioned the early findings in regard to the intelligence of the deaf child. The pioneer research of Pintner and Paterson (9, 10), Reamer (11), and Day, Fusfeld and Pintner (2), indicated that the deaf were mentally retarded from 2 to 3 years. The principal measure of intelligence used by these investigators was the Pintner Non-Language Test (8). Peterson and Williams (7), using the Goodenough Drawing-of-a-Man Intelligence Test with deaf children, reported a median IQ of 80, with a mental retardation ranging from one year to two years and seven months.

The recent studies of Drever and Collins (3) and MacKane (6), seriously question the findings as to the mental inferiority of the deaf child. Using various performance scales, their results indicated that at no age level were the deaf retarded as much as a year. MacKane, however, found that his deaf subjects were retarded two years in their responses to the Pintner Non-Language Test. These findings indicate that further study is needed on the problem of the intelligence of the deaf.

The Problem

The purpose of this study was to answer the question "Do deaf and hearing children differ in mental ability when the language factor is eliminated and intelligence is measured by means of a non-language test?"

The Test

The Goodenough Drawing-of-a-Man Intelligence Test (4) was used for the measurement of intelligence since it

[1] From the Psycho-Educational Clinic of New York University.

requires no verbal responses and it is a non-language test. No difficulty was encountered in administering this test. The directions, "Make a picture of a man. Make the best picture that you can," were printed on each test blank. The examiner indicated through gestures that the children were to draw a picture of a man. No questions were raised by any of the children and most of them seemed to enjoy this test. The teachers and the examiner encouraged the children, but they did not help them with the test. Teachers' ratings on seven intellectual traits were also obtained by use of Division I, Intellectual Traits of the Haggerty-Olson-Wickman Behavior Rating Schedules (5).

The Subjects

The 330 deaf and the 330 hearing children used in this study were tested in the spring of 1935. All the subjects were between the ages of 6 and 12 years. The deaf children attended public day and residential schools of New York City. All the hearing children were from the regular New York City public schools. Both groups consisted of American-born white children. With a few exceptions, all the children were born and reared in New York City. Approximately 90 per cent of both groups were of foreign-born parentage.

Since the teachers of the deaf felt that their pupils came from poor families who were, on the whole, below average in general social status, an attempt was made to obtain hearing children from this same social level. The Barr Scale of Occupational Status (1) of the children's fathers was used to measure the general social status of both groups.

The mean chronological ages, in years, and the mean ratings on the Barr Scale, of the deaf and the hearing groups are given in Table I. The differences in age between the groups was very small. The mean age of the deaf boys was .09 years less than the mean age of the hearing boys. The deaf girls were .35 years older than the hearing girls. The total deaf group was but .12 years older than the hearing children. None of these differences were statistically reliable, and it is justifiable to conclude that the deaf and the hearing children were comparable on chronological age. The

parents of the deaf and the hearing children received fairly similar ratings on the Barr. The parents of the deaf children, especially those of the deaf boys, obtained slightly higher ratings. The mean differences, however, were very slight. In no instance was the mean difference between any of the deaf and the hearing groups as great as one point. And none of these differences were statistically reliable.

TABLE I

MEAN CHRONOLOGICAL AGE, IN YEARS, AND MEAN RATINGS ON THE BARR SCALE OF THE DEAF AND HEARING GROUPS

Group		*Deaf*			*Hearing*			$M_D - M_H$	SD_{diff}	*Critical Ratio*
		Mean	SD	N	Mean	SD	N			
Chron. Age	Boys	9.44	2.03	182	9.53	1.75	160	.09	.20	.43
	Girls	9.82	1.75	148	9.47	1.55	170	.35	.18	1.94
	Total	9.61	1.92	330	9.49	1.67	330	.12	.14	.86
Barr Scale	Boys	8.46	3.01	178	7.64	2.79	146	.82	.33	2.48
	Girls	8.44	2.74	136	8.26	2.89	143	.18	.33	.55
	Total	8.45	2.89	314	7.94	2.85	289	.51	.23	2.22

On the whole, the results justify the conclusion that the deaf and the hearing groups were very similar in chronological age, sex, nationality and general social status.

THE RESULTS

1. The Goodenough Test Point Scores.—The point score results by age and sex for the deaf and the hearing children are given in Table II. Though the total number of deaf and hearing children, for all ages combined, was the same, the number of cases at each age level varied. It was inadvisable to compare the children at the six-year level because of the small number of cases.

There was an increase in the mean point score for each successive age for the deaf and the hearing boys. These increases were not very regular. The greatest increases were obtained in the lower ages by the deaf boys. In the upper ages, the increases in the mean point scores were smaller. The difference between the mean point scores of the 11- and 12-year-old deaf boys was but .27. There was a positive relationship between the point scores on the Goodenough and chronological age. The Pearson product moment cor-

relation between these variables for the deaf boys was .590 ± .035, and for the hearing boys the correlation was .542 ± .041. These correlations were reliable, since they were more than four times their probable error. But they were not very large and they indicate that the relationship between the Goodenough scores and chronological age was not so high as one would expect for a well constructed intelligence test. These results were in accord with those reported by Goodenough (4, p. 35). Goodenough states that the norms may be slightly too easy at the lower end of the scale and too difficult at the upper end.

TABLE II

POINT SCORE RESULTS OF DEAF AND HEARING CHILDREN, BY AGE, ON THE GOODENOUGH DRAWING-OF-A-MAN INTELLIGENCE TEST

Group	*Age in Years*	*Deaf*			*Hearing*			M_D $-MH$*	SD_{diff}	*Critical Ratio*
		Mean	SD	N	Mean	SD	N			
Boys	6	7.78	3.75	19			7			
	7	15.22	7.65	19	16.00	5.40	16	− .78	2.12	.37
	8	18.88	7.47	28	19.39	7.77	31	− .51	2.11	.24
	9	24.46	7.74	22	20.17	8.43	18	4.29	2.58	1.66
	10	26.17	9.69	23	23.98	8.10	35	2.19	2.42	.91
	11	28.66	8.16	32	26.86	9.09	26	1.80	2.26	.80
	12	28.93	8.01	39	33.43	8.73	27	−4.50	2.08	2.16
Total Boys		24.39	10.32	182	25.26	9.81	160	− .87	1.07	.81
Girls	6			6			4			
	7	14.29	7,74	14	21.25	6.66	16	−6.96	2.64	2.64
	8	23.23	3.60	17	25.30	6.60	29	−2.07	1.50	1.38
	9	25.57	8.58	21	27.10	5.70	34	−1.53	2.12	.72
	10	26.08	9.78	25	29.17	6.81	41	−3.09	2.21	1.39
	11	25.51	8.79	36	26.77	8.58	27	−1.26	2.19	.58
	12	27.67	9.96	29	27.67	6.45	19	0.00	2.34	0.00
Total Girls		25.51	9.77	148	27.77	7.59	170	−2.26	.99	2.28
Groups Combined		24.89	10.08	330	26.55	8.83	330	−1.66	.73	2.28

* A negative sign is used in this column to represent a difference in favor of the hearing.

There was slightly more irregularity in the mean point scores for the deaf and the hearing girls than for the deaf and the hearing boys. The mean point score for the 11-year-old deaf girls was .06 lower than the mean point score obtained by the 9-year-old deaf girls. The 11- and 12-year-old hearing girls also showed a decrease in their mean point scores. The mean point score for the 11-year-old hearing girls was .33 lower than that obtained by the 9-year-old hearing girls. The mean point score for the 12-year-old hearing girls, while greater than that obtained by the 11-

year-old girls, was 1.50 lower than the mean point score obtained by the 10-year-old girls from this group. The Pearson correlations between the Goodenough point scores and chronological age were .428 ± .046 for the deaf girls and .254 ± .053 for the hearing girls.

When the deaf and the hearing boys were compared, the differences between the point score means at each age level were very small. None of these differences were statistically significant. The greatest difference was found at age 12. The mean difference of 4.50 was in favor of the hearing boys. The critical ratio of 2.16, while larger than that found at any other age, was not large enough to indicate a high degree of statistical reliability. When all the ages were combined, a mean difference of .87 in favor of the hearing boys was found. This difference was unreliable, for the critical ratio was only .81.

The greatest point-score mean difference between the deaf and the hearing girls was found in the comparison of the 7-year-old girls. The difference of 6.96 points was in favor of the hearing girls. The critical ratio of 2.64 was high and indicated a fair degree of reliability. However, the number of children in the deaf and the hearing groups was very small and the validity of the statistical technique was questionable when it was applied to so small a number.

The mean differences for ages 8, 9, and 10 were small and in favor of the hearing girls. The 11-year-old deaf girls' mean point score was 1.26 points lower than that of the hearing control. There was no mean difference between the 12-year-old deaf and hearing girls. None of these differences were statistically significant. When all the ages were combined, a mean difference of 2.26 points in favor of the hearing girls was found. The critical ratio of 2.28 indicated that this difference was not completely reliable. The mean point difference between the entire deaf and hearing groups, ages and sexes combined, was 1.66 in favor of the hearing children. The critical ratio was 2.28.

The deaf and hearing groups were also compared in terms of the overlapping of the individual point scores. The distributions of point scores for the combined ages are given

in Table III. One hundred per cent of the hearing children received scores between 7 and 52 points. About 97 per cent of the deaf children received scores within this range. Fifty-one per cent of the deaf boys received scores that were below or at the hearing boys' mean while 49 per cent of the deaf boys fell at or above the hearing boys' mean. About 53 per cent of the hearing boys received scores that were below or at the deaf boys' mean and 47 per cent of the hearing boys were at or above the deaf boys' mean.

TABLE III

DISTRIBUTION OF POINT SCORES OF DEAF AND HEARING CHILDREN ON THE GOODENOUGH DRAWING-OF-A-MAN INTELLIGENCE TEST

Point Score	*Boys*		*Girls*		*Total*	
	Deaf	Hearing	Deaf	Hearing	Deaf	Hearing
4– 6	9		2		11	
7– 9	13	2	9		22	2
10–12	6	10	9	2	15	12
13–15	13	18	6	4	19	22
16–18	17	19	15	11	32	30
19–21	18	18	9	23	27	41
22–24	15	23	21	26	36	49
25–27	22	15	20	31	42	46
28–30	16	14	12	22	28	36
31–33	15	10	11	18	26	28
34–36	18	9	10	11	28	20
37–39	11	6	16	7	27	13
40–42	4	7	5	9	9	16
43–45	3	1	2	4	5	5
46–48	1	6	1	1	2	7
49–52	1	2		1	1	3
Total	182	160	148	170	330	330

About 93 per cent of the deaf girls received scores between 10 and 48, while almost 100 per cent of the hearing girls were within this range. Close to 60 per cent of the deaf girls received scores that were at or below the hearing girls' mean, while 42 per cent of the latter received scores that were at or below the mean of the deaf girls.

When all the ages and both sexes were combined, 56 per cent of the deaf children received scores that were at or below the hearing children's mean, while 34 per cent of the latter fell at or below the mean for the deaf.

These results indicate that there was very little difference between the deaf and the hearing children on the Goodenough Intelligence Test. At no age level was the difference between the deaf and the hearing statistically significant. There was a tendency for the hearing children to receive slightly higher scores. The overlapping of the individual scores, however, was very great, and the differences within the groups were much larger than the differences between the deaf and the hearing groups.

TABLE IV

MEAN INTELLIGENCE QUOTIENTS OF DEAF AND HEARING CHILDREN, BY AGE, ON THE GOODENOUGH DRAWING-OF-A-MAN INTELLIGENCE TEST

Group	*Age in Years*	*Deaf*			*Hearing*			MD_{-MH}*	SD_{diff}	*Critical Ratio*
		Mean	SD	N	Mean	SD	N			
Boys	6	80.5	15	19			7			
	7	105.7	31	19	96.9	19	16	8.8	8.4	1.1
	8	98.6	40	28	98.7	25	31	− .1	8.7	0.0
	9	100.0	23	22	84.4	23	18	15.6	7.1	2.2
	10	96.5	13	23	89.1	21	35	7.4	4.4	1.7
	11	106.4	21	32	85.4	20	26	21.0	6.0	3.5
	12	85.1	10	39	91.1	16	27	− 6.0	3.5	1.7
Total Boys		96.26	22.97	182	97.06	21.81	160	− .80	2.5	.38
Girls	6			6			4			
	7	92.1	65	14	121.3	21	16	−29.2	18.3	1.6
	8	108.2	20	17	116.9	22	29	− 8.7	6.4	1.4
	9	103.4	18	21	109.1	19	34	− 5.7	5.0	1.1
	10	92.0	23	25	99.0	14	41	− 7.0	5.1	1.4
	11	83.6	19	36	86.3	17	27	− 2.7	4.4	.6
	12	72.8	20	29	80.0	14	19	− 7.2	4.9	1.5
Total Girls		96.01	23.04	148	107.06	23.23	170	−11.05	2.6	4.1
Groups Combined		96.24	23.00	330	102.21	23.12	330	− 5.97	1.8	3.3

* A negative sign is used in this column to represent a difference in favor of the hearing.

2. The Goodenough Test Intelligence Quotients.—Age norms are provided by Goodenough (4, p. 39) by which the approximate test age of a child may be found from the point score earned on the Goodenough test. The intelligence quotient (IQ) is then obtained by dividing the test age by the chronological age.

The IQs for all the children were computed and the deaf and the hearing groups were compared. Table IV contains the mean IQs by age and sex. The mean IQs for the deaf boys ranged from 80 to 106. With the exception of ages 6 and 11, there was a general tendency for the IQs to become

smaller with each successive age. The Pearson correlation of —.152 ± .054 between the Goodenough IQ and chronological age indicates this negative relationship. The correlation, however, is very low and statistically unreliable. The mean IQs for the hearing boys ranged from 84 to 98. There was a tendency for the IQs to become smaller with each successive age. The Pearson correlation between these variables was —.232 ± .053. This relationship is slightly larger than the one found for the deaf boys. Though the correlation is small, it is statistically reliable.

The mean IQs for the deaf girls ranged from 72 to 108. With the exception of the mean IQ for the 7-year-old deaf girls, there was a tendency for the IQs to decrease with each successive age level. The Pearson correlation between these variables was —.282 ± .052. This correlation is statistically reliable. Similar results were obtained with the hearing girls. Their mean IQs ranged from 80 to 121. There was a decrease in IQ for each successive age level. The correlation of —.549 ± .041 between these variables was larger than those found for the deaf children and the hearing boys.

These results are in accord with the results reported in the previous section on the Goodenough point scores. There was a tendency for the younger children to receive better scores.

When the deaf and the hearing boys were compared, the differences between the mean IQs at each age level varied from .1 to 21.0 points. The greatest difference was found between the 11-year-old boys' groups. The hearing boys were inferior to the deaf boys. The mean IQ difference of 21 points was statistically significant, for the critical ratio was 3.5. The 9-year-old deaf boys were also superior to the hearing boys of that age. The mean IQ difference of 15.6 had a fair, though not complete, degree of statistical reliability, for the critical ratio was only 2.2. On all the other age levels, the differences between the mean IQs were smaller and all of them were statistically insignificant. When all the ages were combined, the mean IQ difference between the deaf and the hearing boys was very small. The difference, .80, was in favor of the hearing boys. It was, however, statistically insignificant.

With the girls, the largest mean IQ difference, 29.2 points, was between the 7-year-old girls. This difference was in favor of the hearing girls. It was, however, of no statistical significance since the critical ratio was 1.6. The standard deviation of the deaf girls for this age was 65, and it was almost as great as the mean. On all the other ages, the mean IQ differences were considerably smaller. They varied from 2.7 to 8.7, and all of them were in favor of the hearing girls. None of them, however, were of any statistical significance for the critical ratios were very low. They ranged from .6 to 1.5. When all the ages were combined, a mean IQ difference of 11.05 was in favor of the hearing girls. This difference is reliable and of statistical significance since the critical ratio was 4.1.

When the sexes were combined, a mean IQ difference of 5.97 was found in favor of the hearing children. The critical ratio of 3.3 indicates that this was statistically reliable. With the exception of the 11-year-old deaf boys, who were superior to their hearing control boys, on no age level were the hearing boys and girls significantly superior to the deaf boys and girls. But when all the ages and both sexes were combined, the mean IQ of the hearing children was larger than that for the deaf children, and the superiority of the hearing was brought out. This superiority of the hearing children was due mainly to the larger IQs obtained by the hearing girls.

It is interesting to note that while the total hearing girls were superior to the total deaf girls, the deaf groups received normal intelligence scores. According to the Terman classification (12, p. 79), an IQ between 90 and 109 is indicative of normal, or average, intelligence. The mean IQ for the deaf children was 96.24, while the mean IQ for the hearing children was 102.21. The distributions of IQs for the combined ages are given in Table V. The IQs ranged from 40 to 180 for the deaf groups and from 50 to 180 for the hearing. When the deaf and the hearing were compared in terms of the standard deviation of the distributions, the middle 67 per cent of the deaf children received IQs between 96.24 ± 23.00, *i.e.*, between 73 and 119, and the middle 67 per cent of the

hearing children received IQs between 102.21 ± 23.12, *i.e.*, between 79 and 125. It is evident from these results that the deaf and the hearing children received IQs over almost exactly the same part of the scale. The wide overlapping of the IQs indicated that the individual differences within the deaf and the hearing groups was probably of more importance than the differences between the mean IQs for these groups.

TABLE V

DISTRIBUTION OF THE IQs OF DEAF AND HEARING CHILDREN ON THE GOODENOUGH DRAWING-OF-A-MAN INTELLIGENCE TEST

IQ	*Boys*		*Girls*		*Total*	
	Deaf	Hearing	Deaf	Hearing	Deaf	Hearing
180	1			2	1	2
170–179	0	1		0	0	1
160–169	0	0		2	0	2
150–159	1	1	2	3	3	4
140–149	5	3	0	6	5	9
130–139	4	5	7	14	11	19
120–129	17	12	15	19	32	31
110–119	20	20	18	21	38	41
100–109	30	32	27	36	57	68
90– 99	30	22	19	28	49	50
80– 89	24	25	19	18	43	43
70– 79	29	21	21	16	50	37
60– 69	14	15	9	4	23	19
50– 59	5	3	10	1	15	4
40– 49	2		1		3	
Total	182	160	148	170	330	330

When the deaf and hearing children were compared in terms of Terman's classification (Table VI), about 32 per cent of the deaf and 36 per cent of the hearing children received IQs between 90 and 109. The IQ classifications of the deaf and the hearing children were very similar. The largest differences between the deaf and the hearing groups were in the border-line deficiency and feeble-minded classifications. About 10 per cent more deaf children were found in these combined classifications.

3. Influence of Sex.—Goodenough (4, p. 56) reports that girls rank somewhat higher than boys on her test. A comparison of the differences between the sexes of this study

was made and the results for the combined ages are given in Table VII. No reliable sex differences were found between the deaf boys and girls on either the Goodenough point score or the Goodenough IQ. The mean differences were very small and the critical ratios indicated that the differences were statistically insignificant. With the hearing groups, a slightly larger mean difference between the boys and girls was found on the Goodenough point score. This difference has a fair, though not complete, degree of statistical reliability. On the Goodenough IQs, the hearing girls were significantly superior

TABLE VI

PER CENT OF DEAF AND HEARING CHILDREN AT EACH LEVEL OF INTELLIGENCE ACCORDING TO TERMAN'S CLASSIFICATION OF INTELLIGENCE QUOTIENTS

IQ	*Classification*	*Per Cent*	
		Deaf	Hearing
140 and above	"Near Genius" or Genius	2.7	5.4
120–139	Very Superior Intelligence	13.0	15.2
110–119	Superior Intelligence	11.5	12.4
90–109	Normal, or Average Intelligence	32.2	35.8
80– 89	Dullness	13.0	13.0
70– 79	Border-line Deficiency	15.2	11.2
Below 70	Feeble-minded	12.4	7.0

to the hearing boys. These results for the hearing children were in accord with Goodenough's findings.

4. Influence of Age at Onset of Deafness.—The relationship between the Goodenough Intelligence results and the age at onset of deafness was determined by the contingency method. Information in regard to the age of onset of deafness was available for 172 deaf boys and 137 deaf girls.

The contingency correlations between the Goodenough point scores and the age at onset of deafness were .33 for the deaf boys and .35 for the deaf girls.

The correlations between the Goodenough IQs and the age of onset of deafness were .31 for the deaf boys and .25 for the deaf girls. These contingency correlations indicate that there is a tendency for the children who became deaf at a later age to get higher intelligence scores. The correlations are not sufficiently high to be of any predictive value.

Further caution must be used in this interpretation since the validity of the data on the age at onset of deafness is questionable.

5. Influence of the Per Cent of Hearing Loss.—Pearson product-moment correlations were computed between the 3A-audiometer scores of 163 deaf boys and 144 deaf girls and their Goodenough point scores. The correlations were —.149 ± .054 for the deaf boys and —.009 ± .055 for the deaf girls. These relationships are low and insignificant, and they indicate that the amount of residual hearing has no influence on the deaf children's intelligence scores.

TABLE VII

SEX DIFFERENCES ON THE GOODENOUGH DRAWING-OF-A-MAN INTELLIGENCE TEST

	Group	Boys			Girls			$M_B - M_G$*	SD_{diff}	Critical Ratio
		Mean	SD	N	Mean	SD	N			
Point Score	Deaf	24.39	10.32	182	25.51	9.77	148	− 1.12	1.06	1.06
	Hearing	25.26	9.81	160	27.77	7.59	170	− 2.51	.96	2.61
IQ	Deaf	96.26	22.97	182	96.01	23.04	148	.25	2.50	.10
	Hearing	97.06	21.81	160	107.06	23.00	170	−10.00	2.50	4.00

* The negative sign is used to represent a difference in favor of the girls.

6. Intelligence Test Scores and Teachers' Ratings.—Division I of Schedule B of the Haggerty-Olson-Wickman Behavior Rating Schedules consists of a list of seven intellectual traits. The relationship between the teachers' ratings on these traits and the children's intelligence test score on the Goodenough were correlated. All the correlations for the deaf and the hearing groups were negative; that is, many children who received unfavorable ratings on the intellectual traits received good scores on the Goodenough test. The correlations for the deaf, —.114 ± .055 (boys) and —.137 ± .055 (girls), were very low, and statistically unreliable. The correlations for the hearing children —.268 ± .053 and —.217 ± .053 were slightly higher than those received by the deaf. While they were more than four times their probable error, they were too low to be of any value for purposes of individual prediction.

7. Item Analysis of the Goodenough Test.—The individual

items of the Goodenough were analyzed and the per cent of the deaf and the hearing children succeeding on each item was calculated. The items on which the deaf and the hearing differed do not fall into any definite category. The deaf children were significantly superior to the hearing on eleven items, while the hearing children were more frequently successful on fourteen items. There was a slight tendency for the hearing children to add more details in their drawings. There did not appear to be any differences in motor co-ordination between the deaf and the hearing children. In some items the deaf were better, in others the hearing succeeded more frequently. In general, the results indicate that the deaf and the hearing children were equally successful on the individual items of the Goodenough Test.

Summary

The Goodenough Drawing-of-a-Man Intelligence Test was given to 330 deaf and 330 hearing children between the ages of six and twelve years, in order to answer the question "Do deaf and hearing children differ in mental ability when the language factor is eliminated and intelligence is measured by means of a non-language test?" Both groups of children were similar in age, sex, nationality, and general social status. An analysis of the results, by age and sex, revealed that on the Goodenough point score, at no age level did the deaf and the hearing children differ significantly. There was a slight tendency for the hearing children, especially the hearing girls, to receive slightly better scores than the deaf. But the differences between the means of the deaf, and the hearing groups were statistically insignificant. The overlapping of the individual scores between the deaf and the hearing groups was very large and of more importance than the mean differences between the groups.

When the Goodenough point scores were converted into intelligence quotients, with the exception of the 11-year-old deaf boys whose mean IQ was significantly higher than that of the hearing boys of this age level, the difference between the deaf and the hearing boys, when all the ages were com-

bined, was found to be very small and statistically insignificant. The hearing girls tended to receive higher IQs than the deaf girls at each age level. Though these IQ differences were statistically insignificant at any particular age, when all the ages were combined, the mean IQ for the hearing girls was significantly superior to that of the deaf girls.

When the sexes were combined, the hearing children's mean IQ was significantly superior to that of the deaf children. This superiority was mainly due to the high IQs received by the hearing girls. The overlapping of the individual IQs of the deaf and hearing children was found to be very large and of much more importance than the differences between the deaf and the hearing. Though the deaf children tended to receive slightly lower IQs than the hearing children, the mean IQ of 96.24 indicated that the deaf children were of normal, or average, intelligence. When the deaf and hearing children were compared in terms of Terman's classification of IQ, very little differences were found between the groups.

No sex differences were found between the deaf boys and the deaf girls. The hearing girls were found to be significantly superior to the hearing boys.

The relationship between the age at onset of deafness and intelligence yielded contingency correlations that ranged from .25 to .35. These indicated a tendency for the children who became deaf at a later age to receive better intelligence scores. Caution must be exerted in the interpretation of this data since the validity of the data on the age at onset of deafness is questionable.

The intelligence scores were not influenced by the amount of residual hearing that the deaf child possessed. This conclusion was borne out by a correlation of $-.149 \pm .054$ for the deaf boys, and $-.009 \pm .055$ for the deaf girls, between these variables. Low negative correlations ranging from $-.114 \pm .055$ to $-.268 \pm .053$ were found between the intelligence test scores and the teachers' ratings on Division I, Intellectual Traits, of the Haggerty-Olson-Wickman Behavior Rating Schedules.

An item analysis indicated that the deaf and the hearing children were equally successful on the individual items of the Goodenough Test.

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What Retards Speech Teaching to the Deaf Parvel?

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BY "PARVELS" I mean what the Spanish language calls *parvulos,* that is, the little scholars we send to a "pre-school school." I dislike this latter term and its implications. The little scholars, born totally deaf, are sent by their parents to a "school for deaf parvels" (before they are sent to an elementary school for deaf children) in order that they learn there to speak *as early as possible.* Recently reports have got into print from teachers of a few of the groups assembled in order to test that possibility. Those in charge of the educational experiment report to our disappointment that their deaf parvels could not be made to speak before the age of six or even more years, although they "vocalized" a great deal, indeed had vocalized from birth. They did not form the words of any national language although they used the vocal cords often vigorously. Why the latter only and not the former is a question of psychology. The present report is by a psychologist interested in the education of the deaf, especially of the totally and congenitally deaf.

It is my wish to illustrate this slowness of our oral teaching success here by reporting exact, though very abbreviated, data from a record kept daily of the progress of one child during three years. I shall discuss these illustrative data by pointing out *the psychological facts* (or call them "the psychological theory") which account for the slowness.

The literature of the education of the deaf is unfortunately still quite devoid of comparable exact and dated reports of the progress of individual children. Only after having numerous reports of this nature can we know what may be expected of a normally intelligent child. It is quite in contrast with the literature of general educational psychology which today furnishes a norm of achievement for every chronological calendar date and every educational date, and

puts tests in our hands by means of which we can place a new pupil. Among teachers of the deaf the prevalent tradition seems to be after a century still that which made Braidwood in England deny the American student Gallaudet information as to *how* his pupils progressed unless Gallaudet would enter into what would have been partnership in a secret society already formed by the Braidwood family. If today one dares to make an open report, he still among teachers of the deaf exposes himself to the suspicion that it is for the purpose of boasting, not for the sake of science. But educational science demands open reports. Hidden facts do not help science.

The earliest educational record of the particular child reported below has already been in print for four years in my *Fitting into a Silent World* (University of Missouri Press, 1934), pp. 31 to 41.[1] He who reads that record, notices that eighty lessons of about one hour each, distributed from age 34 months to age 40 months, reveal among other facts the following which are fundamental:

1. *Speech* teaching (by the sense of sight) is virtually still impossible at the age of 40 months. Cause: Neurological immaturity of the visual nerve centers at that early age. The hearing parvel not only hears, but (like every child) has at 40 months, at 34 months, yea at twenty months, enormously matured auditory nerve centers which force him to speak whenever he hears himself or hears other people.

[1] The method employed may be described in the following outline. The earliest associations of words and realities given to the pupil are between shorthand words (on 3 x 5 inch cards) and toys, a little later also between shorthand words and full size objects, and still a little later between shorthand words and dramatized actions (commands). The shorthand elements (preferred to common letters because of their phonetic value) are those of a system now most widely used in the United States, slightly adapted (from the commercial needs) to the phonetic needs of the deaf pupil. The best way of teaching the first use of sentences is next a psychological problem. We begin at present with two nouns and one verb, continuing with three nouns and one verb. The ideal procedure now expects in the pupil a gradually increasing ability to read aloud. After speech (in a moderate meaning of the term) has thus become a reality, simple number work is begun: Counting from one to twenty, the reading of the clock dial, simple addition, etc. Finally, reading aloud and silently the ordinary printed matter, writing longhand in the usual spelling (unphonetic), and all the other features of the public school curriculum are made accessible to the pupil.

Therefore, he little misses the still immature visual nerve centers during these early years of life. In spite of the latter nervous deficiency he acquires language. This auditory neural maturation is wasted on the deaf child, naturally. Where there is no sense organ, nothing is pumped into the conductive system, the network of neurons, and no muscular reaction can result.

2. The teaching of *writing* is a source for intellectual development upon which instead of speech we try to fall back in the deaf parvel at three years. But that again depends on the maturation of the visual nerve centers; and these are very immature at 34 months and at 40 months. For that reason this age is *not* the recognized public school age. It is experience of long standing which makes the public schools all over the world start the teaching of writing (reading) only at the age of six years. Too bad for the deaf child! His language acquisition must wait for this neural (visual) region to become more mature.

3. (Not so obvious, but true!) The attempt to establish speech teaching at 40 months on touch experiences fails. This is probably not because touch experiences are still unaided through a retarded neural maturation. Touch in all species of animals is of early importance in life. But the *lack of social motivation* in the deaf child at three years interferes. The child can imagine no social purpose (and, being deaf, can be told no purpose) of touching another person's vibrating body (throat, etc.) to compare his own. With an older child at twelve or thirteen years, even if totally deaf and mute, the social experience is hopefully more advanced, the imagination of purpose then far more available. Still more of course with the deaf-mute of twenty years who, perhaps, has passed through a manual school. There is really some sense in it when in a recent publication the orthodox manual teacher proclaimed to his own pupils: "Now, and not before you have grown up, your time for *oral* instruction has come, *if you want* to learn to speak!" Not all parents, however, may be willing to apply this reasoning to their own children. I would not, if I had a deaf child of my own.

In reporting now an extract from the educational record of Virginia L. C. after the date of 40 months, I wish to show how the lack of neurologically founded (mere pleasantness), as well as the lack of socially founded (getting things), *motivation* is the great obstacle to teaching speech. The intelligent child thinks, and in his thought does not see what speech can be good for. Would the intelligent reader of these lines readily submit—without motivation—to learning the Finnish language merely because some enthusiast believes in its rare beauty?

To anticipate, I mention that Virginia even at the advanced age of six years still rebelled now and then at speaking to me while standing behind me, where we intentionally made her stand. "Why do such a foolish thing?" inasmuch as she knew that I had no eyes in the back of my head to see her speak! Of course, I might feel her breath at my back! But does that justify to her a procedure that appears foolish? To the deaf child it does not justify it. The needed social motive is still in abeyance.

My whole method is nothing but a revival of the method proposed but not tried far enough by Alexander Graham Bell and an application of the similar principle, *writing-reading before speaking,* of the Belgian teacher Herlin. The following data should impress the reader with the amount of time *the speech process lags behind the writing-reading* which must later furnish the guide for the child's reenforced speaking. It lags behind because of the absence of social motivation.

From the end of November, 1933, till the end of May, 1934, Virginia was out of town with her parents. On her return at the age of 46 months her drawing of circles, squares and triangles was found to be improved though still a trifle clumsy. The visual nervous maturation was obviously making rapid progress now. She even imitatively drew the very curves needed for shortland writing with notable skill. She was able to recall the meaning of about one third of the cards with shorthand words which she knew six months previous, and after ten new lessons she did two thirds of

her formerly practised card and object matchings without prompting. That is, she had then returned to her former level of knowledge. She learned in the same ten lessons also to recognize the phonetically written number words 1 to 5 and their meaning, by placing the corresponding number of fingers on so many little wooden cubes. Eight color names were also learned: red, green, blue, yellow, grey, brown, white, black.

Our natural ambition, of course, is to teach speech. In her 95th lesson (since 34 months) a new epoch starts: She shows for the first time willingness to feel her own throat and then say "umumum." The *social influence* of the presence of other children, who do the same and whom she imitates, is to be noticed as a significant factor for the origin of this willingness.

The 97th lesson starts another epoch, this time in writing. After being made to write (in shorthand) with a guided hand the words known to her by sight, "knee, foot, hair, ear, chin, nose," she shows a faint beginning of spontaneous copying of writing.

In the 105th lesson, on July 23, 1934, when she is five days older than four years, we succeed with practising the *speech* of *p* and *b*, using a candle, and also again with *umumum*. From now on she shows week after week an increasing willingness for speech practice. But this willingness increases with exereme slowness.

For the 119th lesson (September 10, 1934) we find the following recorded entry: She *can* with a fair approach *speak* "ball, fish, shoe, top," but quickly becomes stubborn and seems to take a special pleasure in refusing to do it. This stubbornness is rather characteristic of her, and still remains so two years later. However, it is characteristic of most small children. They do not want to continue anything very long, because the *abstract social motivation* which makes us grown people continue, is lacking. It taxes the teacher's patience enormously.

On January 18, 1935, Virginia is four years and six months old and receives her 156th lesson since the age of 34 months. If she "consents," she can pronounce with a moderate re-

semblance, when aided by both the written symbol and lip-reading, the following fifteen words: "baby, boat, book, bowl, box, cat, chair, doll, fish, light, mouse, shoe, sofa, table, top."

Her writing meanwhile makes more considerable progress. She understands the composition of each word by elements. But she does not show much respect for the proportions of the elements. As a remedial measure we make her write on specially ruled paper.

The difficulty already mentioned, amounting often to inability, for the teacher to make her show an active interest in her education, is comparable to the "psychology" of many retarded hearing scholars, *i.e.*, those talked about in the following sentences. In a recent issue of School and Society (September 26, 1936, p. 407) a psychologist interestingly reports how he solved an analogous problem in a private school for boys and girls who had failed to get on well in public school, but were above the level of institutional feeble-mindedness. He gave them a course entitled "psychology for slow thinkers" in which he revealed to them their own problems. "They grasped it surprisingly well. Its effect on them was gratifying." Unfortunately we can not yet offer an analogous course to Virginia, to reveal to her the social psychology of her personality. To overcome her stubbornness is "an art" like that of the trainer of animals for the circus.

On August 26, 1935, Virginia receives her 240th lesson, at the age of five years and a month. We write the story of the Three Bears on the blackboard, very simplified, each sentence using only three syntactical columns of the board: There are two objects and one relation. With the aid of lip-reading Virginia is made to read every sentence, and ample illustration is intended to make the meaning of the story clear. This is repeated during the following days. And the result?

On September 6, 247th lesson, we have the following entry in her record: "Her mother brought her and remained in the school. I gave Virginia ruled paper and a pencil. I then wrote on the blackboard, somewhat abbreviated, slowly, but continuously, the story of the Three Bears. As I wrote,

Virginia copied it on her paper. Her mother helped her to the extent of keeping her written work from unduly deviating from the horizontal lines, the existence of which did not impress her much. That Virginia was aware of the continuity of the story she demonstrated by trying, now and then, to write in anticipation of the succeeding events details which I had not yet put on the blackboard. She also showed her understanding by every now and then playing parts of the story with her hands and feet. This is the first time that I felt quite sure that Virginia understood and enjoyed *a whole story* as she read it copying from the blackboard. She seemed to be proud of showing her accomplishment to her mother, who had not been present during the previous seven lessons.

Lesson 252: Virginia now can count, writing (and rather indistinctly pronouncing) and applying her fingers, from 1 to 6 with certainty and 7 and 8 with occasional mistakes.

During the following 30 lessons we teach her map drawing. She enjoys greatly drawing and naming the roads, railway crossings, bridges, etc., leading from her home in the country to various parts of the city important to her. We further teach her to write a few other little stories, and also some geographical terms.

Lesson 300, December 2, 1935. Virginia begins to adjust her writing to the ruled lines, to be satisfied with a smaller size of her writing and to use better proportions among the elements of the written word.

Following the principle laid down by Bell and by Herlin, we concentrate our teaching on reading-writing and introduce speech practice rarely and without expecting much direct progress in it. Virginia shows on many occasions that she has not yet any consciousness of a social value of speaking on her part; therefore, we abstain from wasting any effort. Writing, however, is eagerly done by her. She can see what she writes while she can not hear what she speaks. She can see the social value of writing. Nevertheless, teaching her is taxing the teacher's patience, and is sometimes exasperating, because Virginia, instead of merely writing and thereby satisfying the teacher's intention, spends two thirds

of the school time on acting out the situations which she learns to put down in writing. When she writes, *e.g.*, "The boy pulls the horse," she jumps up, goes to the toy boxes, picks out a horse and runs with it up and down the room to show us, not realizing that time is precious and we had rather not be shown.

Lesson 337, February 7, 1936. Virginia shows such spontaneous interest in counting, that we continue the numbers as far as ten in shorthand, in speech and in writing the Arabic numerals.

During the next twenty lessons we make a strenuous effort to increase Virginia's ability to recall promptly the exact pronunciation of each of the sound elements written on the cards. The great obstacle to progress is the child's resistance to drill, that is, to repeating the same speech sound a number of times. She is quite willing to take a card with the written element in her hand, to look at it, to make an attempt at producing the speech sound, to observe them on the teacher's lips, apply her hands to the teacher's and her own face and to produce the sound a little more perfectly. But when we now want her to repeat the procedure for further perfection, she nearly always balks. Grown people have slowly learned that learning comes through practice, through drill. The little child sees no purpose in our wishing to do the same over again.

We teachers feel that we can not apply to her the medieval method of "the rod" in order to make drill acceptable to the child. We want the child to accept the teaching willingly. Sometimes one feels (innerly!) quite desperate when the pupil adopts such time-wasting, playful ways as taking her message of a spoken word from one teacher, walking slowly six steps to another teacher, climbing on the other teacher's lap, very affectionately, in order to deliver the message and to receive the card with the illustration. It is not possible to apply an efficient drill method to a child only five years old.

Lesson 375, April 20. Virginia, who often stubbornly refuses to speak loudly, has brought a large doll along and decides to give her doll speaking lessons. She herself speaks

the vowels very clearly into the strobilion, holding the doll each time against the instrument to repeat what Virginia tells her. This is interesting as a bit of child psychology. She wants to teach rather than to learn. But she herself on such an occasion performs in a superior way, as behooves a teacher.

During the following weeks we take up again stories like the Three Bears, previously read. Virginia is quite interested in reading these somewhat known stories again provided every sentence read is at once amply illustrated (1) by dramatic action, (2) by blackboard drawings mostly made by herself or (3) at least by pictures to be looked at. Her *reading aloud*, however, is still very confused unless it is aided by lip-reading, and even then the speech sounds produced are often very poor imitations of what they ought to be.

On June 16, 1936, at the age of nearly five years and eleven months, Virginia receives her four-hundredth lesson since the start at 34 months. It should be recorded that the last hundred lessons, given during the last seven months, were of about 1½ hours duration each, rarely lasting two full hours, whereas the first three hundred were of one hour on the average. Virginia now frequently takes a very active interest in reading aloud. She grasps a pointer and spontaneously points at each successive element, then however waits to be prompted by lip-reading, pronounces the series of speech elements as well as she is capable and ultimately dramatizes or carries out the command. Without lip-reading she is as yet usually rather helpless. We have not yet been able to make her memorize very well the sound production at the mere sight of each symbol. And her ability to produce *k* and *g* is still entirely wanting. We are using commands like "Look out of the window" or "Open the box." Every now and then she spontaneously picks up a crayon or a pencil and writes on the blackboard or on paper what she has just read. All such spontaneous activities of the desirable kind are of course highly welcome. Not infrequently, when she carries out a command, she is sidetracked by some furniture or a picture or any other visible feature of the

room. When that distraction lasts too long, it becomes our unpleasant duty to impress her with the fact that life is not all play, but also some "work," whatever her interpretation of it may be.

Disciplining her consists in dragging her away from the charming object and to her little chair. She resents that, cries, but only for a few seconds, and is soon cheerful again. Once in a while it is necessary to put her in a corner. From that she usually emerges after a minute or two. In rare cases, however, she remains in the corner for ten minutes or half an hour rather than co-operate with the teacher. But in such cases there is really nearly always some probability that she is in a state of fatigue and ought to be given a rest rather than continuously taught.

She now shows that she can abstract the size and proportion of the curves she writes from their mere shape. The latter captured her imagination first; and she was a long time extremely careless about making a distinction between a dot and a dash under the vowels of the Gregg system, or a distinction between a curve of one, two or three units in length. She is still often careless, but she demonstrates often spontaneously that she understands the differences by counting the units on the blackboard with her finger tips placed successively on each unit length between the ruled lines,—as she usually counts objects.

She can now count perfectly from one to ten by displaying her fingers or writing the number words in shorthand. But counting by loud speech is still excessively poor, scarcely worth mentioning.

During the last six lessons (age five years, ten months) a feature becomes conspicuous in the child's life of which only occasional and vague tendencies were observed in former weeks. Virginia puts her arms around the other person's neck and places her mouth close to the ear and talks then. She seems now to be forming the concept that *the ears of people are some kind of perceptive organ superior to her own ears* (perhaps resembling in power the eyes on which every deaf child relies so much?—of course we can not ask her to inform us about her mind!) Vibratory sensations on

the skin and probably even more impressive ones on the ear drums she has always had, of course. Sometimes she now invites the other person by gestures, to talk into her ear. Virginia, thus, is carrying on psychological experiments.

On her sixth birthday anniversary she receives her 413th lesson. She seems not yet fully aware of the possibility of using loud speech for efficient and most convenient communication with other persons, although like all deaf children she has used emotional outbursts of vocalization for vague and yet often effective communication all her life, from the very minute of her birth. Her general attitude toward our teaching her is that of a person willing to play a game with someone else without being more than mildly interested in the game. When one strongly urges her to speak aloud, she often sulks for a long time, her lips compressed, and then suddenly uses her lips clearly indicating that she has been speaking covertly although not overtly.

When she wants a drink or candy, she always writes the word in shorthand on the blackboard or on paper. Scarcely ever does she spontaneously pronounce something resembling these words in sound in order to get the things.

We now extend her lessons to last on the average *two hours* each. In order to make Virginia more conscious of the practical use of speech to be heard (not merely seen) by others, we give increased attention to the old problem emphasized by A. G. Bell, that is, the vocabulary problem. Bell insisted 60 years ago that the oral teacher must increase the pupil's vocabulary by giving the parvel plenty of *material to read.* It is regrettable that at this time suitably illustrated reading materials for experimental use with totally deaf parvels are not available. We had to depend on makeshifts.

Many a first grade (even much higher grade!) pupil in an ordinary elementary school experiences difficulty in translating the left-right order of print into a temporal order of successive sound elements for loud reading. Such pupils confuse "on" and "no," or "pit" and "tip." No wonder that this mental translation of spatial position into time order puzzles a deaf child not yet familiar with the time order

of sounds as is the hearing child. There are limits to a child's intelligence. Virginia proves her intelligence by feats like this: By sheer watching when I day after day open a dial lock on a large box she learns to open the lock herself unaided in order to see if there is candy in the box, which sometimes is true.

If a complete shorthand word is written from right to left or from below upward, it will look the same as ordinarily but it cannot serve as a temporal guide for speech. Thus we have to be on the lookout in order to prevent our pupil's confusing the direction of writing. It does not matter if the number 6 is written one way or the other. I have all my life written it just as frequently one way as the other. The parvel regards us then as very arbitrary when she is punished for writing her shorthand words the wrong way. Yet the teacher must suffer even the sight of an occasional tear drop of the child when punishing her, because the temporal order in speech is irreversible and phonetic writing-reading is for the totally deaf child the guide to the quality and correct temporal order of the speech elements which form the words.

In order to overcome Virginia's tendency to vary the proportions of the written elements (which variation is not permissible in shorthand because it changes the meaning) and her tendency to write unduly large even on paper ruled with five equidistant parallels for each line of words, I had to introduce for many weeks the practise of writing every word myself in very thin pencil curves on the paper. Virginia then retraced the pencil writing with ink. This proved to be a very effective method. She did this writing more eagerly even than copying from the blackboard. She enjoyed also the innocent freedom of choosing each day the ink, which was sometimes colored, sometimes black.

We are now (lesson 434) during Virginia's seventh year of life beginning to stress "composition writing," that is, her own construction in three columns of brief sentences consisting of two things and one action or relation, *i.e.*, two nouns and one verb. I have described my experimental ideas about this phase in that larger volume, *Fitting into a Silent*

World. I do not believe that the "straightness" of any particular national language is "psychologically" demanded for an individual's very start of verbal thinking. Hearing babies do not begin with forming their sentences "straight," either.

Virginia is urged to describe a picture in words. The beginning of this form of teaching consists in writing two of the three elements in two of the three columns and making her fill in only the third column. For example, after showing the picture, I write in pencil "The boy has," and she, after retracing that with ink, writes in the third column "a dog." Of course, she often neglects the article, definite or indefinite. That is psychologically natural. The article can not mean anything to her. In her mind it is superfluous. Many national languages exist and prosper without any article. Unfortunately the English language, in spite of having simplified itself in so many other grammatical respects, has retained the cumbersome article.

In lesson 460, we write brief sentences in three columns on the blackboard and make her pronounce them. Repeatedly Virginia picks up a crayon and writes a word, indicating on what subject matter she would like to read aloud.

In lesson 465 Virginia tries to correct me when I write on the blackboard "cats" with the proper s-symbol, which she erases. I try to explain by writing "one cat, two cats, three cats." This is the first time in her educational life that she has shown a *critical* attitude toward the singular and plural forms of nouns, although plurals have occurred many times previously.

She has no idea yet that words of a language are definitely preformed for us and that we can not make up any words to suit our fancy. Often when we practise the separate pronunciation of the individual written elements, she writes a group of them on the blackboard and then looks around for some object to which to assign this "word." She resents it when I shake my head in discouragement of such spontaneity and ingenuity on her part.

She is making rapid progress now (that is, what one calls "rapid" in such a case) in her ability to pronounce correctly from memory the speech sounds of her phonetic alphabet,

with less dependence on lip-reading. However, *k* and *g* are still outside her accomplishment in the production of the sounds of the English language. There is a clear indication that mere rote memory, from sight of the written symbols, of the speech elements will in not a long time be perfect, so that she will be able to read aloud unaided by lip-reading. And there is hope that *the social motivation for learning* which happily enables the ordinary child to enter the public school at this age, will not hesitate to make itself felt also in this deaf child's case now in favor of her speech progress.

In theory she ought already to read aloud perfectly. So far as mere general learning ability of the deaf parvel is in question, she, having reached her seventh year, seems to be more than a year behind that educational accomplishment which *in theory* is offered to her. The retardation seems to be something natural, due to the stubborn *refusal, on innumerable occasions, to submit to the drill* into which she might be pushed by intentionally applied punishment. The fortuitous *social motivation* at this early age is too weak. If anyone among my readers should not understand me, let him not be mystified by the term used. Let him compare the case of a child writing mirrorscript who refuses to change his manner. To him it is incomprehensible why people prefer the movements (of one hand) in one direction to those (of the other) in the symmetrical direction. Years later he will admit the need of social conformity.

We have decided rather to be patient in our expectation of learning progress than to apply the medieval schoolmaster's method, that of "the rod." Severe punishment, systematically applied, might bring about a submissiveness favorable to drill. But it might, and probably would, result in creating a human personality which in the adult stage would be emotionally pathological. We wish to prepare the parvel for a normal life among hearing school children and hearing people.

I close this discussion with two general remarks about two facts which have impressed me because of their psychoeducational significance. First, the greatest difficulty in quickly recognizing shorthand signs consists for the deaf

parvel in the fact that direction, abstract geometrical bearing, plays a rôle in writing and recognizing them. Such abstract distinctions as leftward, rightward, upward, downward, oblique, are hard to learn even for many a grown person. A turtle lying on its back is for everybody still a turtle, a bowl on its face still a bowl. But in shorthand the bowl in its varied bearings signifies four different sounds. And size, purely relative, is also hard to learn. Nevertheless, these facts of design of the symbols do not retard the learning progress as much as the deficiency in *motivation* of the learner.

And another remark, this time in order to correct a psychological misconception by many teachers, even by professional psychologists. The reference to *vocalization,* often reported as a hopeful sign of educational progress of a deaf parvel, ought never to occur in any educational report. Deafness, if complete and congenital, does not restrict the vocalization which nature makes ready for use by the child at the very moment of its birth. The nervous system is mature at birth for mediation between any uncomfortable bodily condition and the co-operation in vocalization of the expiration muscles and the larynx. And then, very soon after birth, not only noxious but also agreeable sensations of different kinds call forth the infant's vocalization. The only influence of deafness which might be worth mentioning consists in the lack of inhibition. That is, hearing children sometimes stop their vocalizations when hearing themselves. The deaf child is never scared into silence by his ugly voice. He often cries, squeals, moans to the distress of his hearing company.

Vocalization is not speech. No national language consists predominantly of vocalizations. Not the cleverest ventriloquist can make himself understood through vocalizations alone. On the other hand, complete suppression of vocalization in whispering still permits speaking any national language with negligible dangers of being misapprehended. Let no one report again that the deaf parvels under his care seemed already to make great verbal progress for no better reason than that they were heard to vocalize so much.

SUMMARY

1. The slowness of the physiological maturation of the visual (compared with the auditory) nerve centers makes it difficult for the deaf parvel to substitute writing-reading (for speaking-hearing) even two years after the hearing child has had a good start in speaking.

2. The slowness of social motivation makes speech lag several years again behind writing-reading when this accomplishment of the deaf parvel has reached a considerable degree.

3. To make the average child born totally deaf speak at the age of four or five years seems impossible.

4. The present writer nevertheless rejects the notion that speech teaching should be delayed beyond its earliest possibility. He does not approve waiting till the congenitally and totally deaf individual approaches the age of citizenship.

5. There is an enormous need for daily records on many deaf children, in order that the vague time references made above (under 1, 2 and 3) may assume quantitative exactness for the average child.

A Case Study of Word Deafness

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I

ONE summer I had the opportunity of teaching a little five-year-old boy who had characteristics of word deafness and some physical deafness. It was difficult to determine the extent of his physical deafness because he suffered from abscesses of the ear periodically which made his hearing come and go.

Word deafness is an impairment of the use and understanding of language due to weakened mental imagery. Very often a word-deaf child hears well enough to pick up speech but does not understand it. He has normal intelligence but the impairment is one that weakens the faculty of association between cortical centers that should function integrally. Every possible association pathway, direct or indirect, should be developed by training to compensate for this impairment. The child suffering from word deafness needs to be taught by a method of sense training.

Sense training is the gateway of learning. To know all he can know about an object a child must bring all his senses to bear on that object. It must literally be sensed. The more senses that can be used on the object the more is learned of it. Each sense conveys something to the mind peculiar to itself which cannot be learned through any other channel.

Because I lived in the home of my pupil, I had an advantage that is denied most teachers; namely, I was able to observe my pupil's reactions to things in the home, in the schoolroom, and at play. This gave me a clearer insight into the child's nature than is ordinarily obtained. The first week of school was a great ordeal. Each morning Kenneth fought desperately to keep from going to our classroom; he thought of every imaginable strategy by which he might escape going. During the time he was so rebellious his father or

mother took us in their car. Upon our arrival at the school building he would have temper tantrums regularly. When he was at his worst he threw himself onto the floor. He went through all phases of temper performances and at the same time kept watch over the door. With the slightest move on his father's part, Kenneth tackled him and held on with all his strength. He realized that the minute we were left alone in the room he was a prisoner, so to speak. The more his father tried to reason with him the tighter Kenneth clung, until he was actually forced aside. After his father had hurriedly left the room, it was necessary to lock both doors to keep Kenneth from running away. He kept this up for two weeks during which time he was so weak and upset from crying that it was almost impossible for him to concentrate.

Up to this time Kenneth had had no formal teaching. His mother's aim until then had been to give him an understanding of things in general. He had practically lived in a world of his own. When he wanted anything he had no way of communicating with members of the family and so he used force. If he was defeated in the first attempt, he displayed a temper tantrum. He was always victorious then because the family gave in rather than put up with the screaming, kicking, and general upset which accompanied his fits of temper.

Kenneth was full of energy and he spent a good share of his time playing games of his own creation. For instance, when he played "Puppy," he crawled at a rapid rate of speed all over the house and bit every one with whom he came in contact. Although he preferred to bite his subjects on the leg, he didn't always discriminate. The object of the game was to bite as many people as he could as many times as he could. To him this was a game. He liked the uproar, the dodging, the noise associated with it. But to other members of the household it was not a game and it invariably ended in a row.

The game "Knife" was played in much the same manner as the Puppy game. Since he gave no previous warning, we were generally caught off guard. Usually at the most unexpected times Kenneth appeared with an open knife running

toward one of us and at the same time mumbling, "Knife! Knife!" The result was that he got pleasure out of seeing us cringe. He put into practice many other games that were equally strenuous, but he was the only one who got pleasure from them.

Play is the all-absorbing business of childhood. It is one of the best avenues through which we may reach the mind and heart of the child. So I taught constructive games to Kenneth and I played with him as though I enjoyed the games as much as he. It was through play that I won his confidence and friendship.

Kenneth was unable to understand spoken words. He was like a person in a foreign country, he heard sounds but they conveyed no meaning to him. For this reason I stood behind him often, when I gave elements and nouns, to try to educate his hearing. In his case the center itself in which the sounds of words are habitually classified and associated with things to which they refer was more or less injured. Example: When Kenneth was told to sit down, he stood and looked at the person who spoke. His face was a perfect blank. He had no idea what to do. I taught him the meaning of "Sit down," first, by letting him see me sit down; second, by letting him hear the words repeated; third, by making him sit down. Almost endless repetition of the words and the act was employed.

Since Kenneth did not understand anything that was said to him, he had to be taught by this same method all of the things that the normal child learns without any formal teaching. It was necessary to have present before his senses all of the subjects of his linguistic efforts, and he was made to enact and objectify all the qualities, acts, and relationships of these subjects. Concepts had to be built up. Many six-year-olds will need to be taught in this way. As an example of his difficulty, Kenneth could hear a bell, his mother had called his attention to the church bell on many occasions, and he had tried to say "a bell," but he did not seem to connect the word *bell* with the ringing of the bell. I worked to build up a concept of the word. I taught him to read, write, and speak the word. I rang a bell and had

him give the speech for it. I showed him the printed form and had him point to the object and *vice versa*. Later, one day while he was sitting in the car with his mother, a church bell rang. Kenneth heard it and he said, "A bell." Naturally his mother was overjoyed at his response.

Another example of the same nature was the word "Puppy." Kenneth had a little white puppy that he played with every day. Sometimes while playing with it, he attempted to say the word "Puppy." But he did not connect the bark of the puppy with the word until I had taught him to speak and write the word. One day while we were seated at the dinner table the puppy barked. It was in the yard and could not be seen from the dining room. To our surprise Kenneth said, "Puppy." The same thing was true in this case; it was the first time he had volunteered to say "Puppy" when he heard the puppy bark. Since he did not see the puppy or the bell, this proved three definite things: 1. Kenneth had some hearing; 2. His co-ordination was poor, making it necessary to use every possible association-pathway before he could understand and hear; 3. Kenneth gained more confidence in himself after he was taught to write.

Kenneth had learned to write rapidly. At first he was easily exhausted and I arranged other work to rest him and prevent his losing interest in writing. Kenneth had a tendency toward mirror writing, sometimes forming his letters backward. This was often true of *p*, *k* and *s*, though these and his other letters were well proportioned and perfect. Occasionally he wrote words backward, beginning at the end. Several times I allowed him to finish the word in this way to see if he would discover his mistake, but he was not aware of it. In writing numbers, he formed *3*, *4* and *5* backward.

Because sounds had no meaning to him, he made up a language of his own. "Argeree" meant ice cream and "arsha" meant good to him. Due to his confusion of some of the colors, chocolate ice cream was "green argeree" to him. Christmas was "Santa Claus tree," spoon and toothbrush were confused, and there were many other peculiar words in his vocabulary, also cases of confused words and elements. The confusion of elements was evident later on when

they were combined for words. He said "mutter" for butter, "mall" for ball, "cake" for take, "nop" for no, "autop" for auto, and others.

He had a good voice but he preferred to use it when he was alone. At such times he made many sounds but didn't say anything. To one listening it was more like a mumbling of words with only vowel sounds represented. I noticed that in conditions of great emotional stress—fright, anger and joy—his behavior was altered in such a manner that he gave spontaneous speech. As an example, once when I broke his favorite toy, "a Santa Claus" doll, he was so furious with me that he ran crying to his mother with the doll in his hand and said, "Mrs. Gay." This volunteered speech was more than worth the price of the doll. Again, great joy produced the same result. In the little town where we attended the movies, some of the local advertisements and preliminaries to the main picture were flashed much more slowly than they are in a city theater. For this reason Kenneth was able to recognize and read all the words familiar to him. He was so happy over attending the movie, and so pleased when he knew the words, that he unconsciously read aloud, using exceptionally good speech.

The habit of using a language peculiar to one's self occurs in certain types of children. It is most often found in cases of disphasia, word deafness, or in extremely hard-of-hearing cases. In each case, the child is seemingly dull of comprehension. As a rule, this type of child can be taught successfully. He must receive the same kind of language training the normal child receives, but he must spend a longer time in the association-forming period. He must be taught by long practice in association.

To conclude the story, Kenneth has developed slowly but surely, and now understands practically anything that is said to him. In time he entered a public school. Although he was not advanced enough to take the first-grade work, he was allowed to sit in the room for some of the classes. Being in daily contact with hearing children was a wonderful advantage to him. At the end of the year he was taking exercises and playing games just as other children were

doing. He was able to read Elson's Primer, take part in the number work, and he showed an interest in making himself understood.

I believe his difficulties will clear up in time and that his response in all subjects, especially in speech, will improve as he gains more self confidence. It is very evident that he is trying to adjust himself to the life of a normal person. And with this attitude on his part, he stands a good chance of success. For the successful blending of education with the natural growth of a child is in keeping with the principles of modern pedagogy, and this is truly applicable in cases of handicapped children.

II

A year later I had the opportunity of teaching Kenneth again. This time I spent one or two days each month actually working with him and during the time I was not able to be with him I prepared charts, outlines, and drills of all kinds for his mother, who tried as best she could to carry on the work under my direction.

After careful testing, I found that Kenneth's general understanding had improved, that he had made decided progress in arithmetic, reading, and spelling, but that his speech and language showed the need of more special training.

His father's position as superintendent of the schools in the vicinity enabled him to secure a classroom for the purpose of private lessons. This room was equipped with all of the necessary material for teaching.

Each day Kenneth attended public school. At first the problem of adjusting himself to the play period with normal children was as much as he could stand. Later through play he became interested in the other children and showed a desire to enter their classroom and to work with them. The psychology of this was that Kenneth did not want to be different from the others.

Since he was strong-willed and wanted his own way in work as well as in play, he took advantage of his mother as

a teacher. By nature he was high strung and easily tired and when the work was hard for him he tried to get out of it by playing on his mother's sympathy. At times like this when she tried to make him work regardless, he became mischievous and playful. He kept this up until he wore her out and finally gained his point. I realized that as long as this condition existed Kenneth's education would be a long drawn-out affair.

The solution of this problem was to encourage his desire to do school work with other children as soon as possible. Even though he wasn't expected to keep up with the class work, it was felt it would be a wonderful experience in personality adjustment. Because number work appealed to him, he was allowed to sit in the first-grade class during the arithmetic period. However, a new problem confronted him there, schoolroom discipline, sharing attention with other children, and competition. The competitive spirit appealed to him greatly. Since he liked to command attention, he soon realized that good work would gain this for him, and he actually kept abreast with the class. Each day when the arithmetic period was over, he returned to his classroom where his mother coached him in other subjects.

The satisfaction that he gained from achieving spurred him on and soon he was anxious to enter the first-grade reading. He found this subject more difficult than arithmetic. Sometimes he would cry because he didn't understand the lesson and it hurt his pride not to be able to keep up with the class. But with extra coaching in reading he managed very well. He then proceeded to do first-grade work in three subjects, arithmetic, reading, and spelling.

With these exceptions Kenneth has to be taught by methods used for the deaf. Charts, drills and various devices are used to help put the language across, and he is also using the Croker, Jones and Pratt *Language Stories and Drills,* Book I. Since he was not held to good speech in the beginning, that is his weakest subject. Kenneth knows all of the elements and when they are pointed to on the chart he gives perfect speech for them. However, in connected sen-

tences he is exceedingly careless; for true to his nature he talks too fast, runs his words together, and fails to give initial and final elements.

I am now drilling him on combinations in preference to single elements. I write simple sentences on the slate and have him respond in speech. When he is careless I stop him, make him realize his mistake, and correct it. If necessary I point to the omitted element on the chart. I often remind him that when he forgets to use the proper elements his friends cannot understand him. This creates a strong desire for better speech on his part.

Kenneth has made a wonderful personality adjustment at play, in school, and in the home. And with patience and special work I believe in time he will be able to attend public school as a regular pupil.

A Program of Agricultural Education for the Deaf

By H. E. Woodruff, B.S.A.

Instructor in Vocational Agriculture in the Georgia School
Cave Spring, Georgia

In setting up a program of work for the deaf in vocational agriculture under the Smith-Hughes Act two fundamental differences are found which drastically alter the program usually followed under the terms of this Act.

First, the inability to hear must be considered. The problem of communication, although a very real one, is only a minor part of the difficulty. The mechanics of communication can be solved even by the initiate. Of far greater importance is the effect of this condition on the ability of deaf children to understand texts prepared for agricultural instruction at high school levels, and the lack of contact that deaf boys have with the outside world, especially the farming part of it.

Second, the pupils attend a residential school, and have done so since they were small children. Even if their families live on farms, deaf boys have few contacts with farm life and activities, spending nine months away from home in residence at the state school.

A substantial part of the normal boy's information about farming comes from the family fireside discussions as to the crops to be planted in the various fields, the proper fertilizers to apply, methods used by successful neighbors, varieties best adapted, and successes and failures of the previous year. These managerial discussions take place while the deaf boy is away. Even if he should work on the home farm during vacation, the jobs to be done are usually routine operations with few important decisions to be made. He has returned to school when harvest time comes and with it the evaluation of the year's work.

The normal boy gets his basic understanding of farming from these contacts and discussions. All his life he has been made to feel keenly that the farm affects his own welfare.

His teacher of agriculture has only to expand on this basis, enlarge his understanding, and guide him in critically analyzing the home practices. The home farm becomes a laboratory where the boy can measure the value of the instruction by the degree of success attained on his own supervised practice projects.

It is obvious that the deaf boy attending a state institution cannot have a supervised project on his own farm. The school farm may be substituted, but the relationship of the success of the farm to the welfare of the boy is less apparent, and this incentive to call forth his best thought and effort is lacking.

According to generally accepted methods of teaching vocational agriculture, the foregoing presents a rather gloomy picture of the possibility of bringing this type of instruction to schools for the deaf. Supervised practice on the boy's home farm is certainly impossible. However, the most fundamental tenet of all vocational training is that it should fit the boy rather than try to adjust the boy to a preconceived plan. But the problem of training the deaf boy in a vocation is not dissipated by a mere statement of the difficulties involved. He has a future of some kind. What we do with him may affect his status as a liability or an asset to society. We must study the problem as it exists rather than as we would prefer it.

We are told that there is a tendency for the deaf to congregate in cities where there are sufficient numbers to form social groups. This natural desire to associate with others of their kind will point many of them away from the farm toward urban life. Other factors offset this tendency. On the farm there is less need for communication with the general public. The number of individuals dealt with is limited and fairly stable so that methods of approach can be more easily formed. A small amount of capital will enable a farmer to begin operations. As his ability is developed and more cash is earned, liberal loans can be secured to assist him in buying a farm. Then many will depend on the guidance of relatives to direct their activities. Where these relatives live on the farm, then a place must be found in the

farm organization for the young man who has finished in the school for the deaf. From reports of the Bureau of the Census we find that the percentage of the deaf engaged in agriculture and related occupations is approximately the same as the percentage existing in the general population, in spite of the fact that most vocational training in schools for the deaf has been in the trades.

It was predicted by many when the new course in agriculture at the Georgia School was set up that the more apt pupils would elect the skilled trades. One suggested that printing would attract the highest group scholastically, with shoe repairing next, then would come the machine shop, carpentering, etc., with agriculture drawing its pupils from the lower levels. As a further reason for this prediction the work assignment, "the farm," in the past had been largely drudgery. When a boy was assigned to the farm for work, he was called on not only to do the labor on the farm itself but cleaning the grounds, hauling coal for the furnace, and other unpleasant tasks that had no relation to farming but which tended to tie themselves to the farm in the mind of the pupil through this association.

As school opened it was with much concern that the reception of the new department was watched. Would the department be handicapped by drawing its pupils from the lower one third of the school body? Happily this has not proved to be the case. At the beginning of the school year the academic department gave a standard achievement test to all of the pupils in the advanced grades. A study of these tests has been made to determine the relative standing of boys in agricultural classes. The two highest pupils scholastically (boys or girls) in the entire school are boys enrolled in agriculture. Four of the top six boys are in these classes, while the percentage of boys in agricultural classes is higher in the upper half of the list than in the lower.

Teaching vocational agriculture presents another aspect that is new, as far as the writer has been able to determine. That is the teaching of business management. In most, at least, of the other vocational classes instruction is centered around the operations. For example, in the shoe shop the

boy is taught the necessary skills to hold a job in a modern city shop. It is not likely that he is taught shop management, salesmanship, and methods to use in making the shop a profitable enterprise. In farming the skills alone are not enough. The farmer occupying any place on the scale above that of share cropper must know something about farm management, market trends, and general business principles. The boy must study more than mere operations to prepare himself for success in this field.

Judging from experience gained since the beginning of the school year, it seems that a few of the deaf pupils will be able to master the rudiments of farm management. Most of these are from families living in rural areas who will be in position to give them some guidance in starting out in the profession of farming. Others will need to be confined to mastering the farming operations.

These divisions are not different from those found among normal boys. Some have the ability to occupy places of farm ownership, or at least the management of a farm, while others who are not able to master managerial problems must accept some lower status. However, the normal boy who falls into this latter group usually drops out of school before reaching high school, and the teacher of agriculture has a select group when he organizes his class for instruction.

There is a tendency for the deaf boy to remain in school an allotted number of years. This probably accounts for the wide range in abilities found among the older pupils. In teaching agriculture to normal boys it can be assumed that all who remain are suitable timber for a full and well balanced course, whereas with the deaf there has been less weeding out. The instructor must take stock of his human resources, giving complete instruction to those capable of mastering it, while to others he must confine his efforts to operations almost entirely, trying to make of them just as efficient farm laborers as possible.

Can the deaf boy hold his own in a comparison with normal boys studying agriculture? This problem naturally presents itself, because this competition will exist on the farm. An effort was made early in the year to get some infor-

mation along this line. About six weeks after the opening of school a stock-judging team was entered in the state contest competing with high school boys.

There were approximately one hundred and fifty teams of three boys each entered in this contest. All the boys were high school pupils in vocational agriculture. They were judging animals for their first to fourth year, the longer periods of experience predominating on account of the keen competition. The team of deaf boys ranked fortieth among the one hundred and fifty entered, or well within the upper one third. This indicates that deaf boys can learn to select good animals, one of the important managerial problems on the farm. It is planned to enter other contests whenever possible, not competing in essays where a more limited command of language would handicap the deaf. The pupils have organized a chapter of the Future Farmers of America to make themselves eligible for these contests and to maintain contact with other agricultural school groups.

In organizing the subject matter an attempt is made to follow methods developed over a period of twenty years since the Smith-Hughes Act was passed by the national Congress. The farm is divided into enterprises, and the enterprises taught are those that will most likely be used by the boy when he takes his place on the farm. The wishes of the boy partly determine this selection. The individual enterprise is analyzed into the jobs that must be done to carry it out successfully. Teaching procedure uses the job as its basis and an attempt is made to teach each job during the season when it is of most interest on the farm. The following shows the analysis of one enterprise for an advanced group:

COTTON ENTERPRISE

Jobs to be taught	*Month*	*Number of days devoted to job*
Selecting land	November	8
Selecting variety and seed	January	4
Selection and use of fertilizers	February	5
Preparing land	March	4
Planting	April	2
Cultivating and chopping	May	5
Controlling insects and diseases	May	5
Harvesting	September	4

This analysis omits such jobs as keeping records and marketing. It was felt that these were too complicated for the first year's work. They will be studied in later years along with more advanced study of the jobs listed. Although this method divides the study of one enterprise throughout the year, yet it actually permits a closer grouping of related jobs. For example, there is more in common between the jobs of selecting land for cotton and selecting land for corn than there is between selecting land for cotton and controlling cotton insects. The following list of jobs to be taught during one month illustrates this grouping of related jobs:

TEACHING CALENDAR—NOVEMBER

Jobs to be taught	*Number of days devoted to job*
Selecting land for cotton	8
Selecting land for corn	3
Selecting land for sweet potatoes	3
Selecting land for peanuts	3
Controlling storage insects of corn	5

Following this outline related jobs can be taught consecutively, and full advantage taken of the "carry-over" from one job to another. For several periods the boys get a general understanding of land use and rotations in connection with the problem of selecting the fields to be planted to cotton. Then less time will be required in teaching the jobs of selecting lands for other crops.

Sometimes it is possible to do some teaching on the more complicated jobs. The class in livestock production follows with interest the daily milk weights of each cow at the school dairy. At the end of the month several periods are devoted to computing the production and feed costs of each cow. All calculations are done by the pupils under the guidance of the instructor. This information is then correlated with the job of selecting dairy cows. The boys make trips to the dairy to study the cows, taking with them the production, cost and profit records of each animal. Changes in amounts of feed given to each cow based on these records are worked out in class.

Some of the enterprises in which a few of the boys are most interested are not carried on in the section of the state

where the school is located. Resort must be made to texts in this case without supervised practice. It is hoped that such information can be given that will prompt keener observation during the summer months while boys are on their home farms.

For the less advanced pupils and for those who fail to master managerial problems a simpler course of study is arranged. This consists largely in performing the operations that can be carried out on the school farm. This simpler course is illustrated by the following enterprise job analysis made for this group:

HAY ENTERPRISE

Jobs to be taught	*Month*	*Days devoted to job*
Planting winter hay	October	2
Fertilizing winter hay	October	1
Harvesting winter hay	May	3
Planting summer hay	May	3
Fertilizing summer hay	May	2
Harvesting summer hay	September	4

As the pupils advance scholastically they may be permitted to change from this course to the more advanced type of training. If they do not show ability enough to advance they will still derive benefit from the repetition of these routine operations.

Each pupil enrolled in agriculture receives two farm journals, one sectional and the other national in scope. These magazines are mailed in bulk to the instructor and are distributed by him for study in class. The advanced pupils read and report new developments in agriculture. The lower groups study the advertisements, finding kinds of agricultural equipment new to them. The class then learns names and uses of these machines, increasing their vocabulary, and getting some of the fundamentals of farm equipment.

It is too early to evaluate fully the merits of methods being used. Some definite progress can be seen. We know that the deaf boys do go back to the farm in large numbers, and in states predominately rural a very large per cent of them must look to agriculture for a livelihood. The final evaluation of the instruction given cannot be made until these boys have actually returned to the farm and a study made of their progress and accomplishments.

Miscellaneous

I. S. F.

Plans for the Next Meeting of the Conference.—The following communication from Dr. Hall, chairman of the Executive Committee of the Conference of Executives of American Schools for the Deaf, to the members of that committee, explains preliminary details in preparation for the next regular meeting of the Conference, in Washington, D.C., in 1939.

DEAR FRIEND:

A decided majority of the Executive Committee was not in favor of communicating with the head of every school in the Conference as to the date of the regular meeting in 1939. The majority favored a date in October and consequently tentative plans have been made for a meeting in the latter part of that month, probably beginning October 24.

The Dodge Hotel may be selected as our headquarters. It is very convenient to Union Station and not a great distance from Gallaudet College. Arrangements can easily be made by bus, taxi, and street car to bring our visitors to the college in about ten minutes from this hotel. Many of our members have made use of the Dodge Hotel from time to time and know it is a very pleasant and well conducted organization. The meals are good and service is without tips. There are large lobbies, and we have the promise that if a minimum number of twenty-five register we may have the exclusive use of a small building on the hotel grounds during the meeting for a sort of rallying place. We can also have a special dinner up to one hundred persons in this building if that is desirable.

Present plans call for a preliminary meeting on Tuesday evening, October 24, with full sessions Wednesday, Thursday, and Friday, and if necessary Saturday morning. A tour of the college buildings and grounds and one or two trips about Washington are planned besides the regular program.

I hope this preliminary set-up is agreeable to you.

Yours very truly,

PERCIVAL HALL

Chairman, Executive Committee

March 15, 1938

Second Annual Meeting of Southern Conference of Executives.—The second annual meeting of the Southern Conference of Executives of American Schools for the Deaf was held in Little Rock, Arkansas, March 10-12, 1938. Mr. L. R. Divine of the Louisiana School was president of the Conference, and Mr. R. S. Dobyns of the Mississippi School was secretary.

The following members were present: Mr. D. T. Henderson, Arkansas; Mr. R. S. Dobyns, Mississippi; Mr. C. H.

Hollingsworth, Georgia; Mrs. H. T. Poore, Tennessee; Mr. T. M. Scott, Texas; Mr. L. R. Divine, Louisiana. Mr. T. L. Ingle of Missouri was present as a specially invited guest.

The proceedings of the meeting included the following activities:

Report of a Revised Curriculum for the First Preparatory Year, by Mr. Divine.

Discussion of topics and adoption of resolutions: 1. The "Pepper Bill" (Federal Bill S. 1634), to provide for the education of all types of physically handicapped children, to make an appropriation of money therefore, and to regulate its expenditure. 2. Provision for training colored teachers of the deaf. 3. The wisdom of requiring blood cultures upon entrance to school. 4. A training center for supervisors, and the raising of standards, salaries and positions of these important officers. 5. Recommendation to Gallaudet College for the specific training of graduates to fill vacancies such as supervisors, physical education instructors and vocational teachers. 6. Advantages of regulating teachers' salaries in accordance with their certificate ratings.

Certification.—Since the last report, applications for certification under the Conference have been received from 50 new applicants, bringing the total to 842. The new names are as follows:

Florence Evelyn Backer, Maryland School
T. Emery Bray, Wisconsin School
Lucile M. Bryan, Louisiana School
Elizabeth Stryker Capps, Maryland School
Lillian Capron, Texas School
Virginia Easton Comeaux, Louisiana School
Sunshine Elizabeth Compton, Texas School
Mrs. Wilbur Thomas Crews, Louisiana School
Alice Beryl Cunningham, Nebraska School
Louise Dew, Ohio School
Mary McCabe Frost, Ohio School
Isaac B. Gilbert, Michigan School
Gladys Walford Golladay, West Virginia School
Mabel Genther Gulick, Kansas School

Jewel Ozment Hage, Texas School
Pearl Burton Hinkson, Arkansas School
Exa Hornsby, Texas School
Leah Hornsby, Texas School
Thelma Hughes, Kansas School
Harriet Jackson, Ohio School
Casper Benj. Jacobson, Ohio School
Alice Kent, Tennessee School
James Robert Kirkley, American School
Felix Joseph Kowalewski, West Virginia School
Michael Lapides, California School
Margaret Jane Le Compte, West Virginia School
Nora Leddy, St. Joseph's School
Dorothy Rita MacVeagh, American School
Evelyn Self McCullough, Tennessee School
Doris Orme McElhinney, Mackay Institute
Mary Lou McGuffee, Kansas School
Anna Mary Murphy, Arizona School
Helmer R. Myklebust, Tennessee School
Nancy Maurine Nilsson, Perkins Institution
Francis B. Norris, St. Joseph's School
Mamie L. Norris, Kansas School
Ruth Ernestine Orenbaum, Texas School
Lewis Arthur Palmer, Tennessee School
Barbara Ettie Phillips, Nebraska School
Henrietta C. Ruthven, Pennsylvania School
Mary Belle Searight, Texas School
Vering Speer, Kansas School
Alice Colquitt Spillman, Texas School
Ada Milin Trentham, Nebraska School
Kathryn Hawes Tyler, Montana School
M. Carolyn Tyler, Maryland School
Jessie Webster, Texas School
Bert C. Westbrook, Texas School
Dorothy Dawn Wilson, Maryland School
George Brill Wood, Wisconsin School

Death of Dr. Booth.—Word comes from Hanover, New Hampshire, of the death there on March 21 of Dr. Frank W.

Booth, long one of America's prominent educators of the deaf.

Dr. Booth's career was a long and distinguished one. He was born in 1855 at Anamosa, Iowa, and graduated from Iowa State College in 1877. After years of success as a classroom teacher, Dr. Booth became superintendent of the Nebraska School in 1911, which office he held until his retirement in 1936. Throughout his service as educator, Dr. Booth was noted for his qualities of leadership, exerted through a kindly, understanding personality, and he achieved unusual success in the field of speech teaching and special methods of teaching language and arithmetic. He served also for a term as president of the Conference of Executives of American Schools for the Deaf.

Objectives of the School for the Deaf.—The Deaf Carolinian, March 5, 1938, lists the series of objectives about which the work of the North Carolina School is organized. As the setting of goals is in keeping with present-day tendency in education, it may be of interest to quote the program.

> Here at the North Carolina School for the Deaf we aim and attempt in our total program of work to attain among other things the following specific objectives:
>
> 1. To seek in every way to help each deaf child become a well-rounded individual who fits into American Community life; a person alert to life about him, informed about local, national and world affairs, capable of independent thinking and action with regard to these, socially adjusted in home and community, reverent toward those things held sacred by us as a people, loyal to our national ideals.
> 2. To so equip each child vocationally that he or she may be as nearly as possible self-sustaining.
> 3. To develop in each child, as far as possible, a strong healthy body, intelligent attitudes toward health, and wholesome health habits.
> 4. To secure for each child, as far as possible, a formal education through twelve grades on the same level as other public schools in the state.
> 5. To develop in each child full capacity in speech reading.
> 6. To develop in each child, as far as possible, capacity to use normal speech.

The Problem of Admission to Schools for the Deaf.—The question as to whether a child should or should not be admitted to a school for the deaf is not always easily determined. Sometimes it is not a matter of deafness, but more that of mentality. Just such a difficulty is raised by an in-

quiry addressed to the *Journal of the American Medical Association,* March 19, 1938. With the permission of the *Journal* we give here the question and the reply—headed "Deaf-Mutism or Feeblemindedness in Girl"—page 916 in the above-named issue.

To the Editor:—A girl, aged 8 years, of normal delivery, has always been well and active. She cannot read or write and cannot or will not co-operate in hearing tests, so that it is impossible to determine whether she can hear anything or not. Examinations of the ear, nose and throat give entirely negative results. The eustachian tubes open easily. She has never talked but does call attention to airplanes and can hear an automobile horn, a gun shot or a firecracker behind her. Is this child a deaf-mute? Is there some way to find out whether she can hear or not? Should she be put in a school for the deaf or should she get individual training in speaking and interpreting sound?

M. D., West Virginia

ANSWER.—There are a number of ways of testing a child as to its capacity without the use of language. It must not be forgotten that a child may appear to be deaf, even at the age of 8 years, because the child has found that with a minimum of effort on its part its wants can be attended to. On the other hand, it seems unlikely that, if this child were of normal intelligence, some effort to hear would not have been made by her before the present time. This type of problem is one which calls for the attention of a trained psychologist since the physical examination is negative. It is possible, too, that this child has that peculiar type of deafness described by Ewing, in which the patient is able actually to hear but owing to a defect in certain parts of the tone range the words and meaningful sounds are poorly interpreted. The first thing that should be done with this child before deciding whether she should be put in a school or should get individual training is to give an intelligence test of a performance type which does not require the use of hearing or speech. A local psychologist attached to a mental hygiene clinic could administer such a test. It may be that instead of a school for the deaf this child would require an institution for the feebleminded. Regardless of that fact, if the psychologist finds her to be of normal intelligence, it calls for special work on the part of the physician and a psychologist who would work out a training program for her, and naturally the greater the experience of the psychologist in this work with deaf children the more useful he will be to the physician.

Summary of Recent Research on Hearing.—The *Journal of the American Medical Association,* March 19, 1938, devotes a full editorial page to a statement of recent research on hearing. Wever and Bray at Princeton have made studies of electrical changes in the auditory nerve and cochlea of an anesthetized animal in response to sound. Sounds of the voice or of music in the same room as the ear of an anesthetized cat may be transmitted via electrical changes in

the animal's cochlea to another room where the sounds are recorded on phonograph records.

Dogs, when exposed to tones sufficiently loud to render them deaf to those tones, lose the electrical cochlear response to the tones. It appears also that this inner electrical response to sound is lost when the basilar membrane or the round window is injured.

Lorente de No, at Central Institute, has reported the findings of special studies of the radial nerve fibers in the cochlea in their relation to the internal and external hair cells. These studies may throw light on the function of the inner ear in discrimination of pitch and in detection of weak sounds.

Personality Study of Deaf Adults.—To determine whether the physical handicap of deafness leaves an imprint on personality adjustment, Pintner, Fusfeld and Brunschwig conducted a study with the use of a standard personality scale simplified and revised to avoid language difficulty. The subjects included a group of 50 students at Gallaudet College and 126 deaf adults in all parts of the United States.

The results of this study, contained in an article in the *Journal of Genetic Psychology,* 1937, 51, pp. 305-327, are indicated in the following summary:

A study was made of the personality adjustments of deaf adults by means of the Bernreuter *Personality Inventory.*

The *Inventory* was tried out on deaf college students and, in slightly simplified form, on deaf adults. In both cases there were indications that the *Inventory* furnished a valid measure of personality, particularly in the traits of self-sufficiency and dominance.

Results obtained from administering the Revised *Inventory* to 50 deaf college students and to 126 deaf adults were analyzed.

When compared with the norms supplied by Bernreuter for hearing populations, the deaf score as emotionally more unstable, more introverted, and less dominant than the hearing. Deaf college students and deaf adult men rate as less self-sufficient and the deaf adult women as more self-sufficient than corresponding hearing groups.

Although some slight differences are found between the test scores of deaf and hypacousic groups, both of these groups in comparison with the normal hearing are more neurotic, more introverted and less dominant.

Among deaf adults, less amounts of neurotic tendency and introversion and more self-sufficiency and dominance are found to be associated with the occurrence of deafness in later childhood rather than at birth or in infancy, the use of speech for communication with the hearing rather than writing and ease rather than difficulty

in making friends with hearing people. The percentage of cases experiencing difficulty in making friends with the hearing is only slightly larger for the group communicating with the hearing by writing than by speech.

Responses to those items of the *Inventory* which permitted the adult groups to discriminate between their reports of behavior in situations involving the hearing and the deaf, respectively, indicate that more of the subjects reported feeling socially at ease when with deaf companions than when among the hearing.

This general picture of the personality of the deaf, supplemented by the previous studies by Welles and Pintner with the hard of hearing, seems to be more or less consistent. It gives us confidence in the inventory as a whole and would seem to suggest its usefulness in the psychological examination of deaf individuals. The picture shows us a group of individuals, suffering from a very severe sensory handicap, reaching almost the same levels of adjustment in daily life as are on the average attained by fully normal individuals. The deaf are only slightly more emotionally unstable, only a little more introverted and not quite so dominant as the normal hearing. The deaf are not separated from the hearing by a sharp difference in in their personality make-up. The remarkable thing is, of course, that they are able to adjust so well, despite the severe physical handicap. Their adjustment seems to be just about as good as that of the hard of hearing. Can we say that a slight loss of hearing seems to be about as disturbing to the personality as a total loss?

Another interesting suggestion arising from our study seems to be that the later in life deafness occurs the more chance the individual seems to have of making normal personality adjustments. We know from many other studies by Pintner and others that the later in life deafness occurs the more language will the deaf individual acquire. A better equipment in language leads to more use of speech in later life and this means more normal relations with hearing individuals. The more speech a deaf person can make use of, the more he is likely to feel on a par with his hearing fellows. Our data do not show that the teaching of speech makes for better adjustment. To show whether it does or not would require a much more elaborate experiment. All that our results show is that those who become deaf later in life and, therefore, acquire language and speech more readily are in general more like the hearing in their personality. From all this it would seem to be a reasonable inference that speech helps the deaf to approach nearer to the hearing in their personality adjustments. But we must not make the error of supposing that it is only speech that does this, and therefore make speech the be-all and the end-all of the education of the deaf. A more detailed study than our present one is required to disentangle the many factors in this complicated situation.

A School for the Deaf-Blind.—A newly established department of the New York Institute for the Education of the Blind, as a separate unit for deaf-blind children, is described in the *New York Herald Tribune,* March 9, 1938. The details are reproduced here, with the permission of the *New York Herald Tribune.*

The first school building ever built for the exclusive use of the deaf-blind is now being put into use at the New York Institute for the

Education of the Blind, 999 Pelham Parkway, the Bronx, it was announced yesterday by Dr. Merle E. Frampton, principal of the institute.

Because there has been comparatively little development in the education of the deaf-blind, a number of new and improved devices, developed by the institute's research staff, are being installed in the new building, and others will be installed as they are developed.

Pupils up to twenty-one years of age will be received in the new department, and those only partly deaf and blind will get instruction by methods especially adapted to their needs. Though the building was opened only two weeks ago and is not yet fully in use, the department for the deaf-blind was started last September, just 100 years after Laura Dewey Bridgman, the first deaf-blind person in the United States in whose case systematic education was successful, started her education under Samuel Gridley Howe, and just fifty years after Helen Keller met her teacher, the late Mrs. Anne Sullivan Macy.

Seven pupils are now receiving instruction and it is expected that there will be fifteen, the capacity number, by next September. They are taught speech reading, by holding their fingertips to the lips of the speaker, and two methods of manual communication. One is an elaborate and rapid system of finger movements in the cupped palm of the "listener"; the other a slower, but simpler, method of drawing letters on the outstretched palm. Reading and writing in Braille are also taught.

For those who have part hearing, there are earphones which may be adjusted to any required degree of amplification, and which may be plugged in on a phonograph, radio or microphone into which the teacher speaks. There is also a bone-conduction hearing device, a vibrating unit which may be held in the hand and applied to any part of the head. This makes hearing possible in many cases where the earphones are of no use.

Dr. Reuben Reiter, director of research, explained that bone-conduction hearing aids had been in use among the deaf for some years, but that the ones used at the institute were more powerful than any previously developed. Experiments were being made with different types of microphones, he said, because a microphone that carried sound to one deaf pupil might not work in the case of a pupil with a different type of deafness.

Dr. Reiter described a room, not yet completed, which would have a "floating floor," eighteen by sixteen feet. The floor, he said, would not be connected with walls, foundations or ceiling, but would actually float on a cushion of air in a manner which he did not explain.

"The purpose," he said, "is to permit the children another form of communication with the outer world through the tactile sense. The deaf-blind children have a highly developed sensitivity to vibrations. The floor floats and acts as a medium of communication."

Vibrations sent through the floor will be received through the bodies of the pupils, and with training, they will be able to distinguish speech or music through these vibrations. Since the floor is floating, no other vibrations will interfere with anything that happens on the floor.

As a small sample of what might be expected of the floor, Dr. Reiter demonstrated a table which could be made to vibrate when attached to a microphone. An eighteen-year-old boy, who a short time ago was unable to distinguish high and low pitch vibrations, sat with his palms flat on the table. A teacher sang a high note into the microphone, and then a low note. After a little hesitation the boy

repeated, in a voice he could not hear, first the high note, then the low. There are other similar devices. An electric guitar, set on the table, and played by a pupil, and through the vibrations of the table he can hear his own playing.

A Summer Camp for Boys with Impaired Hearing.—A summer camp devoted to the interests of boys with impaired hearing is to be conducted during the coming summer at Deerwood, Minnesota, according to an announcement received from Mr. V. A. Becker of the Kendall School.

The camp, which is known as "LangCroft Camp for Boys" is located on Clearwater Lake, about 125 miles north of Minneapolis. It has over a hundred acres of dense woods providing an excellent opportunity for nature study. The buildings include a main lodge, a crafts building, ice house, guest cabin and three sleeping cabins. The camp will accommodate about 35 boys with age-range from eight to twenty years.

A catalogue describing the camp may be obtained by writing Mr. V. A. Becker, Kendall Green, Washington, D.C.

A Manual for Summer Study for Deaf Children.—Mr. S. Richard Silverman, instructor in Central Institute for the Deaf, has prepared an attractive and practical little manual, "Vacation Studies for Deaf Children." This is a 138-page booklet covering a series of 132 graded lessons in language work. The manual is intended as an aid to tide over the ordinarily inactive summer months, providing parents with a very serviceable means of not only retaining the language gains made in school by the deaf child but also of furnishing flexible exercise material, organized according to sound principles of pedagogy, that will carry forward the work of the school.

The book is published by Central Institute, and may be ordered from the Laryngoscope Press, 4574 West Papin Street, St. Louis, Missouri, at $1.00 per copy, postpaid.

A Study of Defective Vision Among Deaf Children.—Employing the data obtained from two successive annual administrations of the Snellen Chart Test for the measurement of visual acuity, Dr. Kenneth W. Braly made an intensive study of the vision of all the pupils in the New Jersey School. A total of 422 children between the ages 5 and 21 were

tested, and all having poorer than 20/20 vision were considered having subnormal vision. Among the surprising facts revealed was the greater incidence of defective vision among the congenitally deaf than among the adventitiously deaf at all age levels. The difference was found to be statistically significant. When compared with public school children, the incidence of poor vision among the deaf children was markedly greater.

Dr. Braly's Summary and Conclusions are comprised in this statement;

1. We have an unusually high incidence of subnormal vision as compared with hearing children in public schools, 38% as compared with 22%.
2. This exceptionally high rate is characteristic of the younger children as well as the older of whom it would be more to be expected.
3. The adventitiously deafened show a very high incidence of subnormal vision, but the congenitally deaf show an even higher incidence and the difference between the groups is statistically significant. (The latter result was very surprising, but we know of no invalidation of our sampling. However, the possibility of the atypicality of our congenital cases and a hypothetical explanation are given.)

These results indicate that our educational and health problems are seriously complicated by visual factors. This is true even among the younger children before their subjection to the visual strain involved in school work. There would seem not only to be the generally recognized defects accompanying adventitious deafness, but also abnormal visual weaknesses accompanying congenital deafness. These problems warrant much more study than they have received if the best corrective and preventive visual programs are to be pursued.

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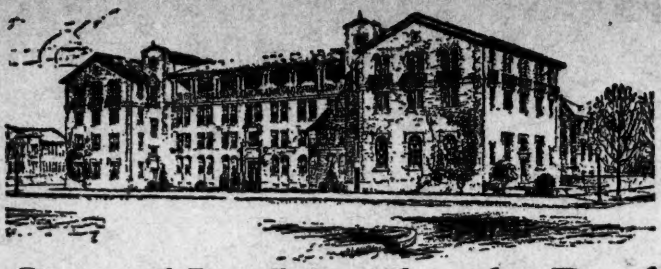

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